ADDIS ABABA SCIENCE AND TECHNOLOGY UNIVERSITY

GRADUATE STUDIES

COLLEGE OF ARCHITECTURE AND CIVIL ENGINEERING

Assessment of Causes of Class One Contractors Failure (The Case of Building Contractors)

By

Etsegenet Assefa

A Project Study Submitted to School of Graduate Studies in Partial Fulfillment of the Requirement for the Degree of Master of Engineering in Civil Engineering (Construction Technology and Management)

May, 2017 G.C.

Addis Ababa, Ethiopia

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Approved by Board of Examiners

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DECLARATION

I, the undersigned, declare that this study, entitled **"*Assessment of causes of Class One Contractors Failure -The Case of Building Contractors*"**, is my original work and it hasn't been presented for a masters or any other degree in this or any other university, and all sources of materials used for the study are duly acknowledged.

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Ababa, Ethiopia

ACKNOWLEDGEMENT

I would like to thank different people and construction companies that have assisted me in realization of this study work. In particular, I wish to extend my deep gratitude and appreciation to Dr. Girmay Kahssay, who had guide and advised me in this study work starting from topic selection. I also extend my grateful acknowledgement to all relevant construction companies and my best friends for their invaluable assistance and cooperation in conducting the data collection work and questionnaire during my study.

Finally, I would like to forward special thanks to Addis Ababa Science and Technology University and Ethiopian Roads Authority for giving me this special opportunity to continue my MSc degree.

Thank you all,

Etsegenet Assefa

May 17, 2017 G.C

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ABBREVIATIONS

CCAE	Constructions Constructor's Association of Ethiopia
GDP	Gross Domestic Product
ISIC	International standards industrial classification
LFS	Labor force Survey
MOFED	Ministry of Finance and Economic development
MoUDC	Ministry of Urban Development and Housing Construction
UN	United nations
USA	United States Of America

ABSTRACT

The construction industry has unique characteristics that sharply distinguish it from other sectors of the economy. It is fragmented, very sensitive to the economic cycles and political environment, and has a significantly high rate of business failure.

The study is conducted to determine the causes of business failure of class one building contractors and to investigate the severity of these causes from the contractor's point of view. The objectives of this study have been achieved by means of questionnaire. The questionnaire included 51 factors which were identified through literature review and actual observations and distributed to 45 contracting companies. The number of respondents was 33 companies, out of which 3 were rejected, and 30 questionnaires were analyzed to determine the severity of each factor affecting contractor's failure.

The factors were listed under the following four groups: managerial, financial, expansion and environmental. The identified factors are ranked according to their influence as assessed by the respondents. The results of analyzing 51 causes of failure showed that the top five affecting factors are: Cash flow management, Award contracts to lowest price, Lack of capital, one man rule, and Low margin profit due to competition.

The results of this study recommended that Contracting companies should improve their financial and managerial abilities and practice in order to meet the challenge, Tenders must be awarded to the best respondent bid with accurate cost estimate and not necessarily to the lowest bidders, contract price should be connected with price index, Contracting companies should experience working together in joint venture to strengthen their resources, and consider risk of business environment in their estimate.

Key words: construction industry, construction business failure, contractors.

CHAPTER 1 BACKGROUND

1.1 Introduction

The prospect of construction business failure is an important topic to explore. Since construction industry has a very high risks, failure is a real possibility. In the overall picture the construction industry is at or near the top in the annual rate of business failures and resulting liabilities (Clough, 1994). The construction business failures become very high due to the characteristics of the construction industry. The construction industry is fragmented, very sensitive to economic cycles, and highly competitive because of the large number of firms. (Kangari, 1988). Also, the adversely relationship between the three parties of project (owner, consultant, and contractor) is one of the important factor that increase the possibility of failure. The contractor is at for more risk than his counterpart in almost any other industry (Kangari, 1987). In general, the study of construction business failure has not been given much attention. This is particularly true in Ethiopia. The increasing number of failures in construction firms makes the understanding of such subject vital (critical). This study will be focused to explore the factors that lead to contractor's failure and identify the severity of each factor. This could help to prevent or reverse a firm's collapse.

1.2 The Construction Industry

The Construction Industry can be described as the sum of all economic activities related to civil and building works: their conception, planning, execution, and maintenance. Such works normally comprise capital investment in the form of roads, railways, airports, ports and maritime structures, dams, power generating stations, irrigation schemes, health centers and hospitals, educational institutions, warehouses, factories, offices and residential premises.

According to United Nations (UN, 1996) International Standards Industrial Classification (ISIC), Rev.3, construction is defined generally as an economic activity directed to the creation, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature, and other such engineering constructions as roads, bridges, dams, etc.

In the case of Ethiopia, although the definition adopted by the National Accounts department of Ministry of Finance and Economic development (MoFED) is the same as that of ISIC, the activities actually covered under the industry are the construction and maintenance activities of: (1) Residential buildings in urban and rural areas, (2) Nonresidential buildings, i.e. factory buildings, warehouses, office buildings, garages, hotels, schools, hospitals, clinics, etc.,(3) Other construction works, like roads, dams, dikes, athletic fields, electricity transmission lines, telephone & telegraph lines, etc.[MoFED,2005].In principle, activities undertaken by the construction industry which do not fall under the industry such as the quarrying of stone, gravel crushing, and manufacturing of bricks, are not part of the industry's production and hence should, if possible, be allocated to separate group of economic activities. This, however, would not be possible in most cases and hence such output is also included in the construction sector [MoFED, 2005]

1.2.1 The Role of the Construction Industry in the Ethiopian Economy

Construction is widely acknowledged as the most important single constituent in a developing country's investment program. Because of such a high contribution, the construction industry has a major influence on the economic growth of a country.

For instance Construction Industry in Ethiopia has increased by an Average growth rate of 29.9% from 2010 to 2014.

1.2.1.1 Contribution to national income

The construction industry has important contributions to the Ethiopian economy, as demonstrated by its share in the Growth Development Program (GDP). For instance, the share of the sector in the GDP averaged at about 4 percent in the period 2009 increased to 7.6 percent in 2013.The sector has registered relatively higher growth as compared to the growth of GDP during this period. Over this period, there has been increased investment on the development and expansion of various infrastructure projects like roads, airports and residential and non-residential housing units.

1.2.1.2 Contribution to employment

The role of the construction industry in terms of creating employment opportunities especially in urban areas is becoming visible. According to the 1999 Labor Force Survey (LFS), of the total employed persons in the country which was estimated at around 25 million, 0.9 percent was estimated to be in the construction industry. The contribution of the industry in terms of creating employment has slightly improved over the years. For instance, according to the 2005 LFS, of the total employed population in the country (31.4 million), 1.4 percent was estimated to be in the construction industry.

1.2.1.3 Contribution to government revenue

The construction industry also contributes to the generation of revenue for the government. The income tax is one of the major revenue sources within the construction industry to the government. The income tax which was Birr 15.2 million in 1997/98 has increased to Birr 78.3 million in 2004/05 but lowered to Birr 32 million in 2005/06 generating nearly half a percentage point of the total government revenue in the period 1997/98- 2005/06. Though there are many other direct and indirect revenues that are generated from the construction industry, the paucity of data has limited this report to indicate the total revenue that is generated.

1.2.1.4 Multiplier effect

Empirical researches support the strong linkages between the construction industry and other economic sectors. For instance, Park quoted in Raufdeen Rameezdeen et al (1989) has confirmed that the construction industry generates one of the highest multiplier effects through its extensive backward and forward linkages with other sectors of the economy. The World Bank as quoted in Raufdeen Rameezdeen et al (1984) also argues that the importance of the construction industry stems from its strong linkages with other sectors of the economy. In Ethiopia there is a close intersectional relationship between construction and other economic and social sectors.

1.3 The nature of the construction industry

The nature of the construction projects makes the industry unique in that the manufacturing facility or plant must move to the construction site (Hinze, 2001). There are many different descriptions of the construction industry, drawn from different specialist disciplines. This

vagueness is compounded by the fact that the construction involves such a wide range of activity that the industry's external boundaries are also unclear (Murdoch and Hughes, 2000). For example, the term "construction" can include the erection, repair, and demolition of things and diverse as houses, offices, shapes, dams …etc. Construction is difficult to comprehend fully because the relationships between the parts are not always clear and the boundaries of the industry may be characterized as:

- It is fragmented
- It is sensitive to economic cycles
- There are extraordinary diversity of professions, specialists and suppliers
- It is largely affected by external environments

There is no other industry that requires the proper application of business practices much as construction industry. The many variables and complex relationships that exist between variables that must be considered in the process of building a construction project necessitates sound business practices and decisions. The coordination and use of many types of labor skills, materials and equipment that are used to build a project require daily application of proper business practices (Adrian, 1975). The variable environment surrounding the construction project complicated decisions to be made concerning the use of labor, materials and equipment. In addition, governmental influence and labor practices have a bearing on business decisions that must be made (Adrian,1975).

1.4 Management in Construction

On the whole, construction contractors have been slow in applying proper management methods to the conduct of their business (Clough and Sears, 1994). Management in construction industry have been characterized as being weak, insufficient, nebulous, backward and slow to react to changing conditions. Nevertheless, in the overall picture the construction industry is at or near the top in the annual rate of business failures and resulting liabilities (Clough and Sears, 1994). Explanations are given for why the construction has been slow in applying management procedures that have proven effective in other industries. The reasons are:

- Construction projects are unique
- Construction projects involve many skills largely non-repetitive in nature
- Projects are constructed under local conditions of weather, location, transportation and

labor that are more or less beyond the contractor's control.

- Construction firms, in main, are small operations, with the management decisions being made by one or two persons (Clough and Sears, 1994)
- There are special problems in construction
- The future cannot be forecasted
- Construction is a high-risk business (Raftery, 1997)

1.5 Risks in Construction

The construction industry generally has a bad reputation for its work. The industry has a reputation for time and cost overruns (Raftery, 1997). This bad reputation is due to many reasons. One of them is that the construction industry is one of riskiest of all business types (Clough and Sears, 1994). There are many types of risk in the construction contracts; they are:

- Physical works
- Delay and disputes
- Direction and supervision
- Damage and injury to persons and property
- External factors
- Payment
- Law and arbitration

1.6 The Construction Economy

The construction industry is large in size and significant in the role it plays in the economy (Hinze, 2001). Construction industry fortunes tend to fluctuate with the general economy (Olomolaiye, Jayawardane and Charrie, 1998). Construction has a cyclical nature and quick response to changes in the economy. For that reason, entry in the industry must be facilitated. In fact, more than one in every eight business starts occurs in construction (Hinze, 2001). The easy entry is made possible and necessary for the following reasons:

- High growth rate in the construction industry
- Low capital requirements
- Little absolute cost or profit advantages for established firms
- No rigid licensing requirements or fees

- Firms are seldom sold as a unit (continuity is not assured or guaranteed)
- A company can be formed just to construct a single project (Hinze, 2001).

1.7 The Contractor's Organization

Construction Contractors Association of Ethiopia (CCAE) was established on October 28, 1991 to protect the obstacles facing contractors (main actors of the construction industry) and to help them play their appropriate role in the development of the construction industry. First the Association had a few members and leaders. However, following the growth of the construction industry in the country, the number of members of the Association has increased as the activities of Association are expanded and enhanced. By expanding its leading and working system, CCAE is now undertaking several activities. The major ones include the following.

The Association has made most of the contractors in the country be its members who get several benefits from the Association. Based on findings of research, the Association organizes capacity building workshops, conferences and discussion forum which are aimed at seeking solutions for problems that members face while they undertake their activities. It all enhances the awareness of its members through the dissemination of government proclamations, regulations and directions and other information related to the construction industry.

On top of that the Association serves as a bridge between contractors and government with the objective of creating healthy working relations.

1.8 Failures in Construction

Throughout recent years the construction industry has witnessed an increasing number of construction financial failures (Adrian, 1997). The construction contracting business has the second highest failure rate of any business, exceeded only by restaurants (Clough and Sears, 2000). Although many of the firms that fail are small in regard to their owned assets, there is evidence of business failures among large firms (Adrian, 1997). For the past several years, construction contractors have accounted for a disproportionate number of business failures in the U.S.A. For example, during 1994 in which construction accounted for 8 percent of the gross national product, contractors accounted for approximately 22 percent of all financial failures and 18 percent of the resulting liabilities. Business failures in the construction industry can be traced

by many causes. Some of these are related to

- excessive competition,
- unexpected bad weather,
- national slumps in the economy, and
- Simply bad judgment.

In addition, a large number of contractors' business failures can be traced to discuss of proven business (Adrian, 1975). In the Ethiopia, there is evidence that the number of contractor's failure is increasing rapidly.

1.9 The Ethiopian Economy

The Ethiopian Economic Association (EEA) has been preparing annual report on the Performance of the Ethiopian Economy since 1999/2000. In March 2007, it published the fifth annual report on the Ethiopian Economy, "Unemployment Challenges and Prospects" being its thematic issue. For this report, The Current State of The Construction Industry has been chosen to be the thematic issue. The construction Industry has been identified as a thematic issue owing to a variety of considerations: first, the issue is timely; second the industry has been registering remarkable performance in recent years; and third, despite its importance in the overall economy, it has not been assessed comprehensively to a level that enables one to understand the industry and make policy recommendations. The country's huge infrastructure expansion and urban centers' remarkable building construction activities provided an opportunity for taking up the issue for further analysis. However, lack of sufficient information on the industry may not allow an in-depth analysis of the issue to the required level. In addition, lack of time series historical data on the industry had also limited comparisons over the years.

1.10 Statement of the Problem

Throughout recent years the construction industry has witnessed an increasing number of construction financial failures (Adrian, 1997). The construction contracting business has the second highest failure rate of any business, exceeded only by restaurants (Clough and Sears, 2000).For a long time the study of construction business failure has not been given much attention like the study of construction business success. In Ethiopian, contractor's failure becomes a phenomenon and no attention is given to such subject. The increasing number of

contractor's failure makes the understanding of this issue, not only important but also critical. Therefore, this requires further studies on factors causing failure of class I Building contractors.

Business failures in the construction industry can be traced by many causes. Some of these are related to: managerial, financial, expansion and environmental causes. Under these major groups, there are many possible sub factors such as: Cash flow management, Award contracts to lowest price, Lack of capital, one man rule, Low margin profit due to competition, Inflation.

In this study, the factors affecting construction project failure to be determined, then analysis of these factors to be examined by the contractors in the Ethiopian to determine the critical factors. The findings of the study will help to minimize class I Building contractors' failure.

1.11 Objectives of the study

The objectives of this study are as follows:

- To assess factors causing failure of class I Building contractors.
- To identify key factors causing failure of class I Building contractors.
- To recommend appropriate solutions that minimizes class I Building contractors' failure.

1.12 Research question

- What the significant causes of class I Building contractors' failure?
- What measures should be taken to minimize class I Building contractors' failure?

1.13 Limitation of the Study

The scope of the study is confined to building contractors registered as grade one in the Ministry of Urban Development and housing construction (MUDHC). The limitations of the study are the following but not limited to;

- Shortage of literatures and previous studies
- Non responsiveness of professionals, to whom questionnaire is distributed.

CHAPTER 2 LITERETURE REVIEW

The definition, causes and symptoms, models, types of business failure are to be explained in this chapter. Also prevention and cure of types of business failure is to be illustrated.

2.1 Definition of Business failure

There are many definitions of failure. According to Dun and Bradstreat's annual Business Failure Records (1986), which provide historical data on business activities in USA, a business failure is defined as a business that:

1. Ceases operation followings assignment or bankruptcy.
2. Ceases operation with losses to creditors after such actions as foreclosure or attachment.
3. Voluntarily withdraws, leaving unpaid debts; and,
4. Are involved in court actions such as receivership, reorganization of arrangement or voluntarily comprising with creditors.
5. Voluntarily compromised creditors.

According to Frederikslust (1978), failure is the inability of a firm to pay its obligations when they are due. It mostly appears in a critical situation as consequences of a sharp decline in sales, as a result of recession, the loss of an important customer, shortage of raw materials, deficiencies of management etc.

Altman (1993) defined failure from the point of view of economics criteria. A company is considered to have failed if the realized rate of return on invested capital, with allowances for risk considerations, is significantly and continually lower than prevailing rates on similar investments. Another criterion is insufficient revenues to cover costs and situations where the average return on investment is below the firms cost of capital.

Storey (1994) attached a pejorative connotation to the term failure, implying either that the business should never have been started in the first place, or that the person was not competent to do so, or that the business left behind significant unpaid debt.

Watson & Everett (1993) attributed business failure to for different situations: discontinuance for any reason; ceasing to trade and creditor loss; sale to prevent further losses; and failure to make a go of it.

2.2 Causes and Symptoms of contractors' Business Failure

Causes of contractors' failure can be divided into four main groups:

- Management group
- Financial group
- Expansion group
- Environmental

2.2.1. Managerial Causes

They include important causes that have strong influence in the contractor's failure. These causes will be as follows:

1. **Lack of Experience in the line Work.**

The owner of the company should employ high degree of qualified working team in the company. This team should have good experience in the same line of work, also the owner should be.

2. **Replace key personnel**

Losing any key person in any construction company is a big disaster. A new person needs three to six months to be familiar with company's policies and regulation, with the new stuff and many contractors. Many contractors do not recognize the amount paid for learning period.

3. **Assigning project leader in the site**

Project leader should be qualified for the job because he is the vehicle for reaching project goals.

4. **Labor productivity and improvement**

There is a direct relation between productivity and cost, productivity is not only very important term to a contractor but also it is the key to success or failure. Uncontrollable weather, worker moral and management supervision are the main factors influence the productivity.

5. Bad decisions in regulating company policy

Bad management decisions might not cause failure directly but they lead to failure. Decisions in regulating the company policy should not be taken unless all significant factors involved not only be considered but also handled in accurate and correct manners that the results will be satisfactory from all viewpoints.

6. Use of project management techniques

Project management is the integral of the entire construction project functions which include coordination of sub-contractors, scheduling, cost control, labor relation, billing, and purchasing, expanding and other functions related to the project. Any shortage or missing in these leads to failures.

7. Company organization

For each project there is a need to prepare an organizational chart which determines the grouping of activities, the authority relationships, and the communication channels between the groupings.

8. Procurement practices

Purchasing material with good quality and reasonable price is not an easy task. Therefore, it's recommended to have material specialist who can read specifications and decide the reasonable materials required for the company.

9. Claims

When disputes arise, the contractor should minimize them for two reasons. First, the costs associated with them; secondly, the contractor's name in the market will be destroyed. The contractor should quit the claim, even though be missed some of his rights, because the owner will complete his building and will disappear from the market, but the contractor will stay.

10. Internal company problems

Each employee will have more loyalty to his nationality and will not prefer to work with another nationality. Also the problem between partners will have bad effect in the company.

11. Owner's Absence from the company

No one can take the place of the owner in the company; even a full time manager can't manage like the owner, even if he has full confidence.

12. Using computer applications

Computer applications can help the contractor to do the work easily, quickly and accurately. Those contractors who are still using old methods are less productivity than the modern contractors.

13. Frauds

When the company is not planned, organized, directed and controlled, the chance of fraud will be higher. Frauds can happen in various departments in the company.

14. Neglect

When the management doesn't respond to problems and suggestions, this may leads to add costs to the company.

2.2.2 Financial Causes

The financial stand of the contractor is very important for running the business. Work improvement sometimes needs money because improvement needs buying new equipment or developing new techniques. All the important managerial causes couldn't keep the contractor save without good financial stand. The financial causes are as follows:

1. Low margin profit due to competition

The number of contractors would be expected to be high in Ethiopia. As the number of contractors increase, the margin of profit decreases. Consequently, the construction industry is highly competitive and the profit margin very small.

2. Cash flow management

Availability of cash flow is very important for a contractor to run the business. Consequently, a contractor should plan for cash flow, or one day he will not have money to pay his expenses.

3. Bill and collecting effectively

It's important to send the bill to customer on time. Adding charges to late submission of payment will encourage customers to pay on time.

4. Poor estimation practices

Poor or inaccurate estimation will lead to fail in any construction project. The owner of the company has to employ expert person who can make accurate estimation.

5. Evaluate project profit in one fiscal year

In construction, it's extremely difficult, in one fiscal year to know whether or not each project is making a profit or a loss before the project is completed.

6. Employee benefits and compensations

In Ethiopia, bonuses are not quite common. It's applied in large construction companies, but medium or small companies don't give bonuses. Bonuses encourage the employs to work harder and better.

7. Controlling equipment cost and usage

In buying new equipment, the contractor must decide whether to own or to lease. The more suitable for his business must be considered. Some contractors made the wrong decision, which effects on his final profit.

2.2.3 Expansion Causes

The expansion is the normal growth in any business. If the company doesn't develop, the companies, which are the same size, will develop and become stronger than the solid company. However, the expansion should be done under very good researching, planning, and controlling. The size of the company should be reasonable for the business to avoid failure. The expansion causes are defined as under:

1. Expanding into new geographic locations

The change from geographic area in which a contractor is usually bidding, achieving productive work and making a profit, can cause failure. The difference in customers, methods, procedures, regulations and labor conditions can be significant and expensive if not planned for.

2. Opening a regional office

When the contractor decides to open a regional office, he must have a plan for the office as a part of the plan. It should determine in advance of how long the contractor will continue the effort if

it doesn't succeed, because making a profit in the first or second year is very difficult. If the losses exceed the planned amount, the plan should be reviewed.

3. Increased number of projects

A contractor must know his ability and maximum volume for each year. Overwork may leads to shortages and causes failures to satisfy every client demands.

4. Increased size of projects

The most common factor of failure is the dramatic increase in the size of project, if the contractor is not aware of the safe ways to grow and expand.

5. Change in the type of work

The contractor should recognize the importance of researching and planning before taking a new type of construction. The entrance cost which is the money paid for learning period during which a contractor needs to learn a new type of work, is always under estimated. A contractor may complete one or two losing projects before he can build a new type of construction profitably.

6. Lack of managerial maturity

A construction contractor who is running a fast growing often finds difficulty to determine the limit of his effectiveness. A contractor cannot predict the point at which volume will outstrip management ability.

7. Change from private to public or vice versa

There are many differences between private and public projects should be recognized by a contractor to avoid the failure. Quality forbid lists used criteria for selecting winning bids, amount of collaboration between parties and the quality of the work expected and delivered are the main differences between these two types.

2.2.4 Environmental Causes

The environmental causes affecting the local area will be included in this part. These causes are defined as follows:

1. National slump in the economy

If the government doesn't have money, it will not offer new projects and contractors will run out of work.

2. Construction industry regulation in Ethiopia

The entrance to construction industry in Ethiopia requires no limited education or good past experience for the company's owner. The only regulation is that he is not a governmental employee.

3. Owner involvement in construction phase

If the owner's key roles were prepared accurately and quickly, this will help the contractor to do work smoothly. However, if the preparation was not done properly, this will increase reworks, change orders and claims in the project.

4. Bad weather

The temperature and humidity has a strong relation with the productivity. Therefore, the contractor must expect reduction in the productivity, due to bad weather, which should be considered in bid estimation.

The relative weight of ten major causes of business failures in U.S. identified. (Dun and Bradstreet, 1986).The most significant failure cause is economic factors. Within the economic factors category, there are five subcategories:

1. Bad profits
2. High interest rates
3. Loss of market
4. No customer spending
5. No future

Of these subcategories, bad profit is significant. Bad profits account for 74.2% of the failures in the economic factors category. Since economic factors account for 59.8% of all failures, alternatively it can be said that bad profits account for slightly over half of all failures.

Dun and Bradstreet listed failure factors and the percentage average of occurrence in the construction industry in their yearly reports. The percentages of occurrence of these factors over

the 5-year period 1989-1993 are presented in Table 2.1. From Table 2.1, over 80% of failures were caused by five factors, namely 'insufficient profit' (26.72), 'industry weakness' (22.73%), 'heavy operating expenses' (17.80%), 'insufficient capital' (8.29%) and 'burdensome insufficient debt' (5.93%).

Table 2.1: Weighted average values of failure factors (Arditi, 2000

Failure factors	Weighted% occurrence
Budgetary issues	
• Insufficient profit	26.72
• Heavy operating expenses	17.8
• Insufficient capital	8.29
• Burdensome institutional debt	5.93
• Receivable difficulties	1.46
Human/ organizational capital issues	
• Lack of business knowledge	3.89
• Lack of managerial experience	0.91
• Fraud	0.85
• Lack of line experience	0.68
• Lack of commitment	0.62
• Poor working habit	0.59
Issues of adaptation to market conditions	
• Inadequate sales	2.20
• Not completive	0.29
• Overexpansion	0.15
Business issues	
• Business conflicts	2.43
• Family problems	1.16
Macroeconomic issues	
• Industry weakness	22.73
• Poor growth prospects	0.28

• High interest rate	0.06
Natural factors	
• Disasters	2.94
Total	100.0

Kangari (1988) concluded that the analysis of business failure shows that the number of yearly failure in the construction industry have risen 484% from 1978-1986. A more accurate portrayal of the status of construction industry is through the use of failure rate. This statistics has risen from 22 per 10,000 to 107 per 10,000, or an increase of 386% from 1978 to 1986. This can be attributed to low construction activity and high interest rates. In years of 'between' 1983 to 1988, the average age of a construction company at failure has been declining and the most difficult time for a new company is the first three years. After that time the possibility of failure starts to drop. Abidali and Harris (1995) listed common managerial characteristic of failed companies as follows:

1. Autocratic chief executive
2. The same person as both chief executive and chairman
3. The company board
4. Lack of engineering skills
5. Lack of a strong financial director
6. Defective managerial skills
7. Incomplete accountancy system
8. Defective bidding system
9. Poor marketing skills
10. Over-trading
11. Losses in projects

John Argenti (1976) in his book 'corporate collapse' summarized what was written in failure. He concluded six main causes as a result of what written about the subject of company failure follows:

1. Top management
2. Accounting information
3. Change
4. Accounting manipulation

5. Rapid expansion
6. Economic cycle

Ross and Kami (1973) in their book ' Corporate Management in Crisis' concluded that the most sever cause of failure is bad management, and in particular the breaking Ten Commandments listed below:

1. You must have a strategy and must communicate it.
2. You must have overall controls and cost controls.
3. The board must actively participate.
4. Avoid one-man rule.
5. Provide management depth.
6. Keep informed and reacts to change.
7. The customer is king.
8. Do not misuse computers.
9. Do not engage in accounting manipulations.
10. Provide an organization structure that meets people's needs.

Another list of symptoms was listed by Cohen (1973) under the title 'Confidence comes before a crash'. His list includes the following:

1. Liquidity problems must be investigated- they may be sings on approaching disaster.
2. It is surprising how easily credit can often be obtained.
3. Make sure that your customer mix is not drifting towards the … payers…
4. Keep abreast of technology
5. Do not put prestige above profit.
6. Do not have too few customers.
7. You should ask why if your growth rate is not seven or eight percent per annum.
8. Treat your employees as human beings.
9. Do not over expand.
10. Do not borrow too much or at too high interest rates.

Cohen also notes that managers seldom seem to realize that they are on the verge of collapse until it actually happens. In an article called 'Causes of company failure' Hartigan (1973) listed seven main causes of failure.

First, there is ***lack of capital***. In the early years of a business the proprietors often obtain assets on hire purchase, they seldom make allowances for early losses and so become highly dependent on the good will of creditors who do not always relish the role. Overtrading (rapid expansion in turnover not matched by an expansion of capital) is a frequent cause of failure especially where inadequate costing methods are used.

Second, ***under costing***; often there is no costing system at all and even where there is, such things as interested on loans or depreciation are forgotten.

Third, ***lack of control***; the proprietor prefers to be active himself rather than check up on other people's activities.

Fourth, ***lack of advice***; proprietors are reluctant to ask for advice from bankers, accountants, solicitors and so on.

Fifth***, the government***; a great many bankrupts blame the government, but very often this is just an excuse-everyone knows that, without warning, tax rates change, laws are passed, credit is squeezed.

Sixth, ***trade fluctuations***; companies are often caught out by the business cycle, by mergers and by technological change.
Finally, ***fraud;*** this cause is increasing.

John Argenti (1976) in his book 'corporate collapse' summarized the opinion of experts in failure. Kenneth Cork is the senior partner of one of the largest insolvency accountants in Britain. He had much experience in this field. One of the main causes of failure, he said, is simply bad communications; the boss dose not knows what is happening to the business as a whole in large companies especially; great waves of paper deluge the chief executive with thousands of the tiny disjointed facts. Only occasionally does are came across a system that tells the chief executive in simple form what he want to know, which is how his business is doing as a whole. Another major cause is failure to keep up with a change in technology. Mr. Cork has a golden rule: never undertake a development the cost of which you cannot write off and still remain in existence.

Sir Ronald Leach had an opinion on one matter is definitive: if the management of a company is good then company will only fail as a result of bad luck. One aspect of good management is to avoid overtrading. Another aspect of good management is to calculate one's cash flow position for months or even year ahead. Another different opinion was of Mr Paterson who identified several causes of failure. He identified several causes of failure as listed below:

1. Budgetary control
2. Banks
3. Fraud

Argenti (1976) summarized the results of what the writers said and his interviews with experts are listed:

1. Management

There is wide or even universal agreement that the prime cause of failure is bad management. Good managers will seldom make the same fatal mistakes as poor managers or, if they do make them, their managerial ability will protect the company from the worst consequences.

2. One man rule

'One-man rule' is intended to describe chief executive who dominate their colleagues rather than lead them, who make decisions, in spite of their hostility or reticence, who allow no discussion, will hear no advice.

3. Non-participate board

Many of the functional directors who sit on main boards, and many chief executives of subsidiary companies who do, take little part in discussions on matters affecting the company as a whole and only come alive when something is discussed that bears upon their particular special area of interests.

4. Unbalanced top team

The team ' top team' includes directors and very senior executives and advisers below director level. The phenomenon of imbalance is plainly visible in many engineering companies where not only the chief executive is an engineer but so are most of the boards.

5. Weak financial function

A special case of unbalance in the top team, and in particular at board level, is a weak finance function. This may appear as a general phenomenon throughout the company resulting in inadequate financial and accounting controls as described below under 'Accountancy information'.

6. Lack of management depth

This also helps the autocrat to continue playing an exaggerated role in the company which is a useful indicator of possible failure.

7. Chairman-chief executive

The chief executive is responsible to whom? He used to be responsible to shareholders but as their power has waned it has left a vacuum at the top of the pyramid that today is filled by anyone who is able to fill it. Sometimes it is the government, sometimes the workers, but usually it is top management and often the chief executive himself. Sometimes he uses his double power prudently, sometimes he abuses it, and sometimes he simply goes stale or makes a mistake. There is no one above him to shake him awake or divert him or warn him or dismiss him.

8. Accounting information

What is lacking in companies that fail is accountancy information; lack of physical information, such as output statistics stock levels or sales by area or customer complaints. Four defects are particularly mentioned. Budgetary control, cash flow forecasts, costing systems and valuation of assets

9. Change

Each company must have the ability to react to changes when needed. It is useful to place the changes into five main groups: competitive, political, social, economic and technological environments. Change, or rather failure to respond to change, is a major cause of collapse, then. The company either does not notice the change or does not respond correctly. Of course, some changes occur so suddenly and unpredictably that the company is wrong-footed and through no fault of its own, collapses.

10. Constraints

We have now a new cause of collapse. It is the trends to emergence of an atmosphere almost of hostility towards companies on the part of the customer, the employee, the state, students, and eventually even the man in the street. The demand that some form of accountability to society be devised for companies was heard all over the world. The belief that groups of people, other than shareholders, should draw a benefit from companies grew and spread and the belief that groups of people should not be harmed by companies in the pursuit of profit gained wide acceptance. These new views become so strongly held and so widespread that the freedom of companies to respond to change was decimated. Constraints have now become excessive and the companies should deal with the world as it is.

11. Overtrading

Number of writers and experts pointed to overtrading as a major cause of failure. When a company expands it has to inject cash into stocks, debtors and other aspects of the business at approximately the rate at which the company as a whole is expanding. Collapse from overtrading can occur in several ways, of which two are interesting. The first strikes at healthy as well as unhealthy companies and arises solely because the managers underestimate the amount they must borrow or the time it may take to arrange the loans. The second definition of overtrading seems to me more convincing for it relates to the company which, in an attempt to expand, increases, turn-over at the expense of profit margins. Now, let us suppose that turnover increases faster than profits then, in any attempt to finance an increase in stocks, debtors, and so on with borrowed money, the income-gearing of the company (i.e., the amount of interest on the borrowings in relation to profits) will rise. No company can continue to do that for long without arousing the suspicions of their bankers who, on losing confidence in the company, will eventually decline to extend further credit.

12. The big project

There seems to be wide agreement that one of the almost tediously repetitive mistakes that lead to failure is the big project where costs and times are underestimated or revenues overestimated.

13. Gearing

There are unfortunately a number of different definitions of this term, which is also called

'leverage' in the USA. It can mean the volume of long-term fixed interest loans as a percentage of total capital employed; thus a company whose equity is valued at $100m and has raised $30m debentures has a gearing of 23 per cent (or 30 per cent by some calculations). High gearing is a warning signal that no one should ignore.

14. Normal business hazards

The collapse of a company is in some ways, similar to the sinking of a ship. If a ship is in good condition and the captain is competent it is almost impossible for it to be, sunk by a wave or a succession of waves. Even if there is a storm, the competent captain will have heard the weather forecast and taken whatever measures are needed. Only a freak storm for which quite inadequate notice has been given will sink the ship. In view of this, a manager who blames an economic recession for his company's collapse is like a captain who has not heard the weather forecast. And what *does* that manager expect-a world without economic cycles? Some manage" blame the government; perhaps an increase in a tax or, some new legislation has 'caused' the failure. But again, what *does* he expect-a world in which taxes and laws are not changed? This is like the captain of a 'hip which is grossly overloaded blaming a *two-foot* wave for the, inking-and, in one sense, he is right; it *was* a *two-foot* wave that sank it! But what about all the other, ships nearby which are, still afloat?

15. Financial ratios

Financial ratios are useful indicators of trouble and possibly of failure. A great deal of work has been done over the past several decades to establish the reliability of a number of financial ratios as indicators and the length of the list that follows is testimony to this work.

16. Creative accounting

Creative accounting can cause the failure of a company. While others believe that creative accounting is generally a symptom of failure, not a cause. To explain the creative accounting as a cause of failure the managers know perfectly well that the company is in trouble they refuse to admit it and start publishing the accounts in the most optimistic color possible. They also know that if this becomes generally recognized the bank will tighten its credit terms, customers will begin to sidle away; suppliers will begin to demand cash on or before delivery. But worse than this the managers themselves will be seen to have failed. Their wives and children will see it and then their friends. A hard knot of anxiety ties itself in their minds.

17. Non-financial symptoms

These non-financial symptoms differ for each industry and even each company. Generally a large number of such symptoms are displayed by failing companies. For example customers will note a decline in quality or service, suppliers will notice that the firm running down stocks of components or materials or reducing the size of orders, or taking longer to pay. Employees will observe the greater resistance to pay increases, cuts in overtime and less generous treatment generally, delays in capital expenditure authorizations, rising stocks, the outdated product, the declining market share, the growing volume of customer complaints and an increasing desperation among the top, and later the middle, management.

2.3 Models of failure

A distinct and different modeling technique is presented which can be applied to characteristics of individual companies to determine their likelihood of business failures. Many models are presented, and their application in the construction industry is described.

One of the pioneers of predicting business failure is Professor Edward Altman (1971, 1983). In the late 1960s, he developed a model for predicting failure tendency using a sample of 66 companies. Half of these companies had gone bankrupt. By analyzing different financial ratios of these firms, he developed a model that would fairly well distinguish between which the sixty six went to bankrupt and which are not. His model is well known as the Z-score model, shown in the following equation"

$$Z = 0.012A + 0.014B + 0.033C + 0.006D + 0.999E$$

Where, A = working capital/total assets;

B = retained earnings/total assets;

C = earnings before interest and taxes/total assets;

D = market value of equity/book value of total liabilities;

E = sales/total assets.

According to Altman, this model is a good indicator of bankruptcy tendency within two or three years from time of analysis. If the Z-score calculated was less than 1.81, this meant that the company was going to go failed in the next two or three years. Z-score greater than 2.99 meant that the company was not going to bankrupt. If the Z-score was between 1.81 and 2.99, the bankruptcy of the company was unclear.

The Z-score model was developed from companies that were not involved in construction. The group of companies used to develop the model was consistent in size. No firm with assets lower than $1,000,000 was used and no firm with assets greater than $25,000,000 was considered. In addition, as the ratios chosen suggests, all companies were public. The model may be more applicable to construction firms with assets in the range for which the model was developed.

Another model was applied by Demister (1971, 1976). His model applied the technique of financial-ratio to determine the failure probability in small businesses. Using zero one linear regression, Edmister developed the following model:

$$Z = 0.951 - 0.423A - 0.23B – 0.482C + 2.77D – 0.452E – 0.352F – 0.924G$$

Where,

A = ratio of annual funds flow to current liabilities, which equal to one if the ratio is less 0.05, but is zero otherwise;

B = ratio of equity to scale, which equal to one if the ratio is less than 0.07, but is zero otherwise;

C = ratio of net working capital to scales as described by Robert Morris Associate (RMA) average ratio, which is equal to one if the ratio is less than – 0.02, but is zero otherwise;

D = ratio of current liabilities to equity divided by the corresponding RMA average ratio, which is equal to one if less than 0.48, but zero otherwise;

E = ratio of inventory to sales divided by the corresponding RMA industry average, which is equal to one if the ratio has shown an upward trend, but is zero otherwise;

F = quick ratio divided by the trend in RMA quick ratio, which is equal to one if the trend is downward and the level prior to receiving the SBA loan less than 0.34, but is zero otherwise; and

G = quick ratio divided by RMA quick ratio, which is equal tone if the ratio has shown an upward trend, but is zero otherwise.

Using the failure criteria (if $Z > 0.53$, the company would not fail; and if $Z < 0.53$, failure occurs), the model predicted all of the failures and 86% of the non-failures.

The use of E demister's model is a starting point, however. Its use rather than the Z-score model developed by Altman would apply to the vast majority of construction companies and could assist them in staying away from failure.

Table 2.2 shows an environment/response matrix. The causes of failure of small firms were expressed in this matrix by Boyle and Desai (1991). The environment is represented on the

vertical axis and is divided into two categories, internal and external environment. Internal environment represents the events that are under management's control. External environment corresponds to events that are beyond management's control. Response is represented on horizontal axis and also is divided into two categories, namely administrative responses, which represent the short-term operational activities, and the strategic responses, which represent the long term planning of the firm. This matrix is adapted to the construction industry by using the factors used in Dun and Bradstreet's annual Business Failure Records (1989-1993).

Table 2.2: Environment/response matrixes (Boyle & Desai1991)

Environment			
	Internal: Events under management control	CELL I	CELL II
	External: Events not under management	CELL III	CELL IV
`		Administrative Systems and Procedure	Strategic Long term planning
		Response	

In matrix (Table 2.3) Cell I covers the internal-administrative factors, consists of budgetary and human capital issues. Cell II covers the internal-strategic factors, represents issues of adaptation to market conditions including sales, competitiveness, growth and expansion. Cell III covers the external-administrative factors, expenses business issues that cover the characteristics of the individuals who manage the companies, and business conflicts. Finally Cell IV covers the external–strategic factors, includes natural factors and macroeconomic issues such as industry weakness and interest rates.

The issues in Table 2.2 are expanded using factors that define each issue. These factors are very causes of failure whose percentages of occurrence in the construction industry are given by Dun and Bradstreet. The percentages of occurrence of these factors over 5- year period 1989-93 are calculated and listed in the environment/response matrix in Table 2.4.

Table 2.3: Environment/response matrix distributions with failure factors

Environment	**Internal: Events under management control**	CELL I • Budgetary issues • Human and organizational capital issues	CELL II • Issues of adaptation to market conditions
	External: Events not under management	CELL III • Business issues	CELL IV • Macroeconomic issues
`		Administrative Systems and procedure	Strategic Long term planning
		Response	

Table 2.4: Environment/response matrix distributions with failure factors for five years

Environment	**Internal: Events under management control**	CELL I **Weighted (%) Occurrence** **Budgetary issues** Insufficient profits …… 26.71 Heavy operating expenses …….. 17.80 Insufficient capital ……. 8.29 Burdensome Institutional debt ….. 5.93 Receivable difficulties ……... 1.46 **Human and Organizational Capital Issues** Lack of business knowledge ……. 3.89 Lack of managerial experience …. 0.91 Fraud ……..0.85 Lack of line experience ……. 0.68 Lack of commitment ……..…… 0.62 Poor working habits ……..... 0.59 **TOTAL: 67.73**	CELL II **Weighted (%) Occurrence** **Issues of adaptation to market conditions** Inadequate sales...……. 2.20 Not competitive.…….. 0.29 Over expansion..……..0.15 **TOTAL: 2.64**
	External: Events not under management	CELL III **Weighted (%) Occurrence** **Business issues** Business conflicts …..…….2.43 Family problems ……... 1.16	CELL IV **Weighted (%) Occurrence** **Macroeconomic issues** Industry weakness..…… 22.73 Poor growth prospect…… 0.28 High interest rates……. 0.06 **Natural factors** Disaster……..……..2.94
`		Administrative Systems and procedure	Strategic Long term planning
		Response	

An alternative approach to explaining the reasons of business failure in the construction industry is the classification of Dun and Bradstreet in the form of input/output model Figure 2.3. In this model, organizational and environmental factors influence a company's success or failure individually, jointly or indirectly through company performance factors.

Beaver (1966) developed a model based on four propositions: 'the larger the reservoir, the smaller the probability of failure; the larger the net liquid asset flow from the operation (i.e. cash flow), the smaller the probability of failure; the larger the expenditure for operations, the greater the probability of failure; the larger the amount of debt held, the greater probability of failure (Arditi, Koksal& Kale, 2000)

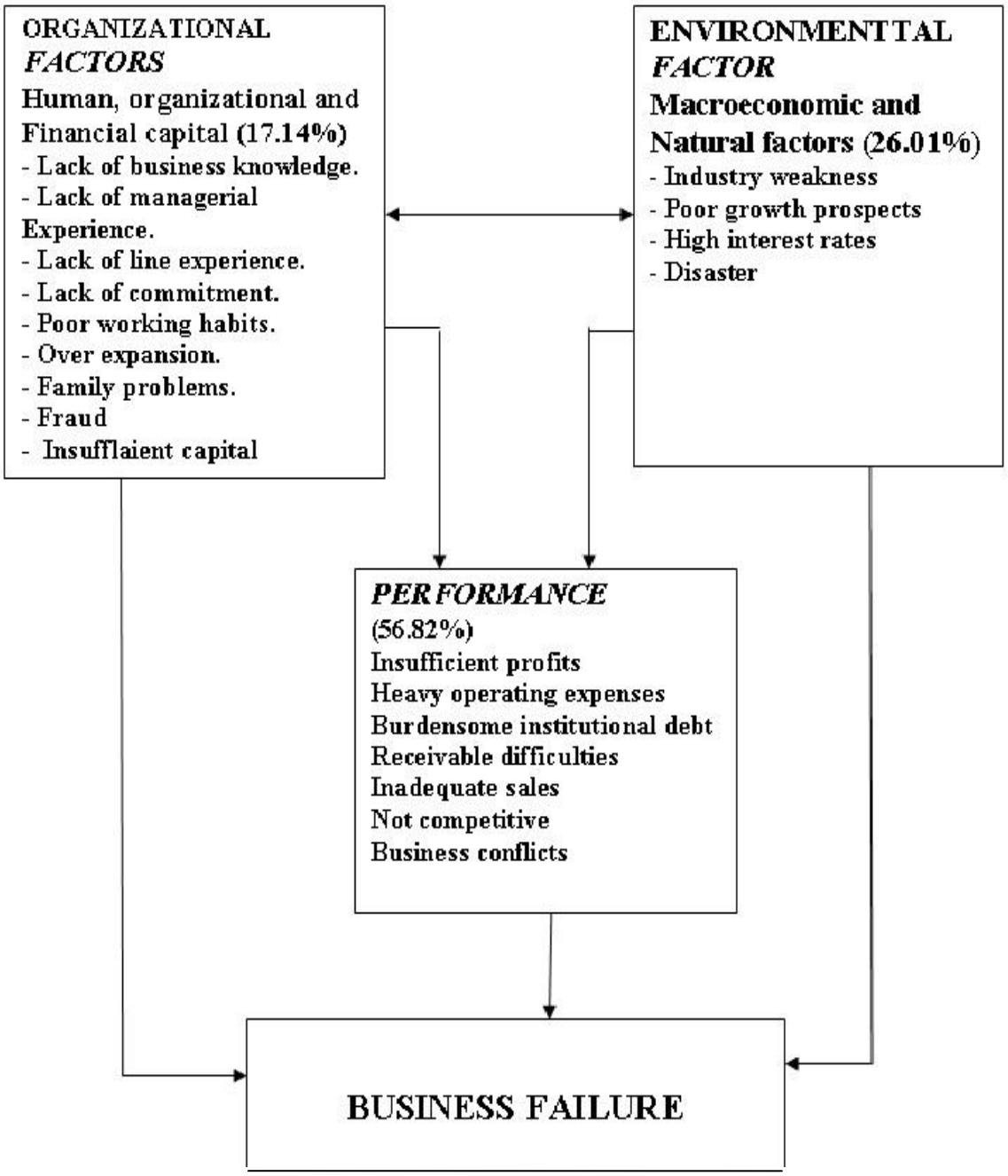


Figure 2.1: Input/output model of business failure in the construction industry (Ardiri, 2000)

2.4 Types of failure

There must be several very different paths or trajectories of company failure. Harvey described several examples of companies which failed without ever making any profits; at the same time Altman said that over 50% of the firms that failed were less than five years old (John Argenti, 1976). Roll-Royce is different example. It was a highly profitable company for several decades. So there are certainly three types of failure. The three types of failure will be described below (Figure 2.4). Type 1 failure follows a very low profile, indicating that its performance never rises above 'poor' before sinking. Type 2, on the other hand, shoots upwards to 'fantastic' heights before crashing down again. Type 3 is a rather more complex trajectory; these companies have usually been going for years or decades so the start and early years are not shown. As a comparison, the trajectory for a healthy non-failing company which follows the well-known S-curve consisting of a slow start, a rapid build-up and then an indefinite period of stable 'good to excellent' performance.

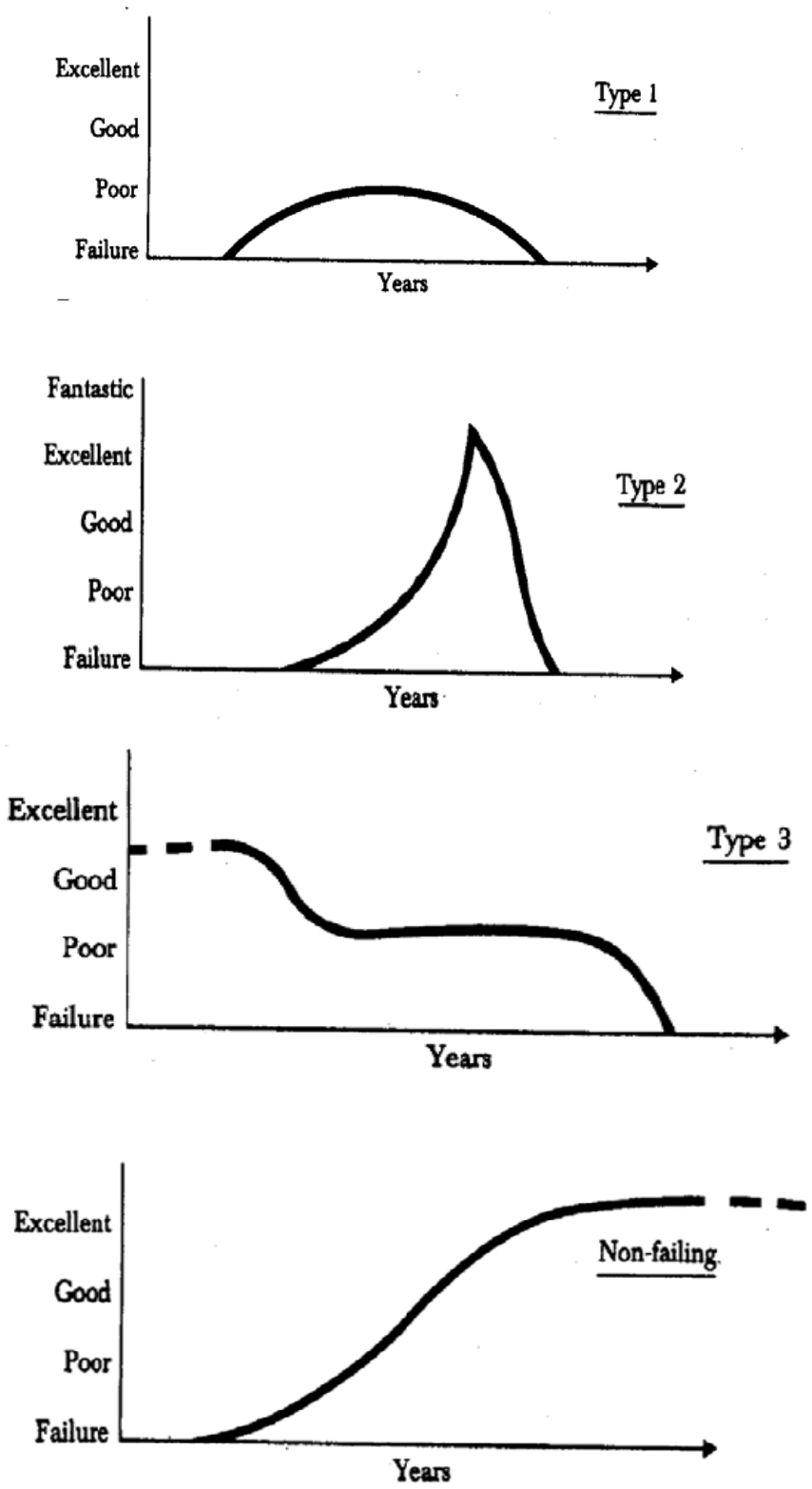


Figure 2.2: Types of failure (Arginti, 1976)

2.4.1 Description of Type 1

Type 1 failure occurs only to companies newly formed and, almost invariably therefore, affect only small ones. Type 1 failure is low and brief. The general health of the company probably never rises above 'poor and' and it probably fails within five years.

At point 1 the type 1 trajectory (see figure) at the launch of the company, a number of defects will be seen. There will be one-man rule because the company may only have one manager and lack of management depth. At point 2, there will be no budget, no cash flow plans, and no costing system. At point 3 the company will either obtain a bank loans or bought equipment on hire purchase. At point 4 the company may launches a big project. Type 1 companies begin life with four serious defects. At point 5 it becomes clear that the proprietor has in fact seriously underestimated the cost and overestimated the revenues of the projects the company was formed to launch. Point 5 may well occur within months of the start of the company. At point 6, the cash flow are probably still negative and so are profits; all the financial ratios look poor. At point 7 the proprietor may begin creative accounting because he expects to have asked the bank for a further loan. At point 8 several other non-financial symptoms will appear. At point 9 a normal business hazard occurs, such as a strike. At point 10 the proprietor takes some form of crisis action such as cutting the selling prices to customers. At point 11 he seeks further loans although his net assets are probably negative. Either he obtains more capital, in which case at point 12 he finds he cannot make enough profit to maintain the interest payments, or he does not; in either case the Receiver is called in point 13. However, the main feature of Type 1 failure that they 'never got off the ground. 60 per cent of all failures are of this type.

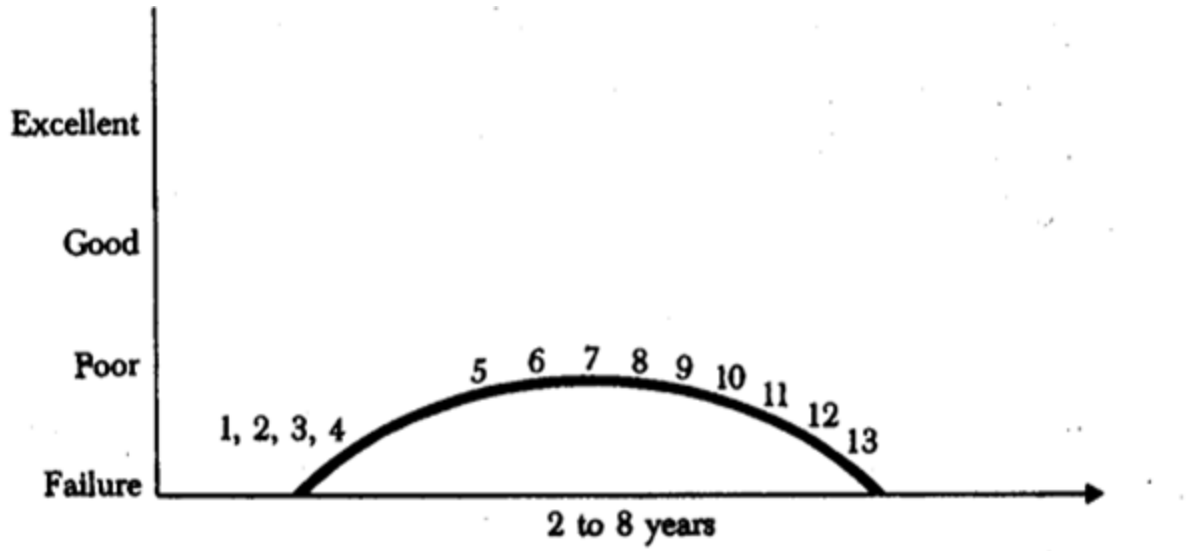


Figure 2.3: Type 1 failure (Arginti, 1976)

2.4.2 Description of Type 2

Type 2 failures also occur to very young companies although they usually survive longer than Type 1. The trajectory is wholly different from Type 1, the companies get off the ground. At point 1 the same management defects as in Type 1are seen. Type 2 trajectories diverge from Type 1 at point 3. Sales continue to expand rapidly necessitating new capital resources (point 4) and these resources are readily made available (point 5). No over gearing or overtrading occurs. Offers of capital are received in some profusion (point 6) and sales and profits continue to rise (point 7). The company has reaching 'good' at point 8. At point 9 the company is noticed by the press and the company has to succeed because it is publicly expected to, so it has to sell more, so it has to borrow more, so it has to succeed more. By point 10 the company is now so large. At point 11, whether it has 'gone public' or not the proprietor himself is now extremely wealthy and his name is known. At point 12 turnover grows again-but this time the profit do not. No one knows that this inevitable turning point has been reached because creative accounting begins immediately at point 13. At point 14, then, we find the most entertaining non-financial symptoms. Technically they are overtrading, for turnover has now risen so long and so fast that the bankers begin not to believe their luck and, at point 16, they refuse further advances. But point 16 is on the downswing of the trajectory; something happens at point 15 to turn it down. Sometimes it is normal business hazards. The collapse is now quite swift and no creative accounting can stop the collapse to point 17. The Receiver is called to point 18.

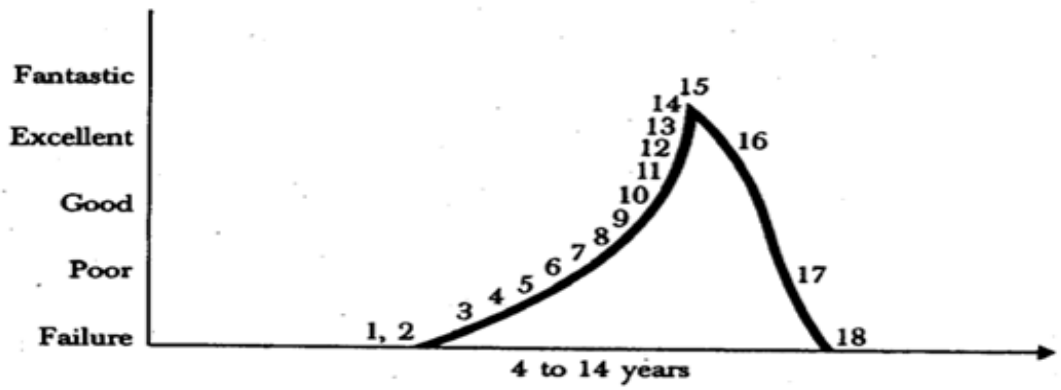


Figure 2.4: Type 2 failure (Arginti, 1976)

2.4.3 Description of Type 3

Type 3 failures occur only to mature companies which have been trading successfully for a number of years or decades. Type 3 failures are considerable-probably between 20 per cent and 30 per cent of all failures. At point 1 the company has been and remains 'good to excellent' with turnover rising soberly in real terms, profit margins good, gearing low, morale good and so on. At point 2 several defects must be recorded in management structure, namely one-man rule or non-participating board or weak finance function. At point 3 certain defects in the accounting information systems are noted. At point 4 one can observe that although a major change has occurred no adequate response has been made. It is well worth noting that these defects at point 2, 3 and 4 are visible for months or years before the initial collapse occurs at point 5. An over trade, a failed project, a constraint, or a hazard occur in any permutation of two or more. Following these events, profits fall severely at point 6. At point 7 the financial ratios deteriorated. At point 8 morale falls and other non-financial symptoms appear. At point 9 profits have still not recovered even though it may not now be one or two years after point 5. At point 10 creative accounting begins, partly because the managers realize that they need a large loan. This is obtained at point 11, lifts gearing to dangerous levels. At point 12, profit levels out at last but at a volume that does little more than cover the interest payments. The general health of the company is 'poor' or a little above. At point13 the managers will either launch a new ambitious project or launch a campaign to expand sales from existing facilities. At point 14 sales and profits will rise due to efforts and the apparent health of the company will improve. Point 15 is a repeat performance of point 5-except that, in this case the company is already waterlogged. At point 16 profits fail to cover interest payments, a cash flow crisis occurs and all the drama of the last few months begins. At point 17 the Receiver is called in.

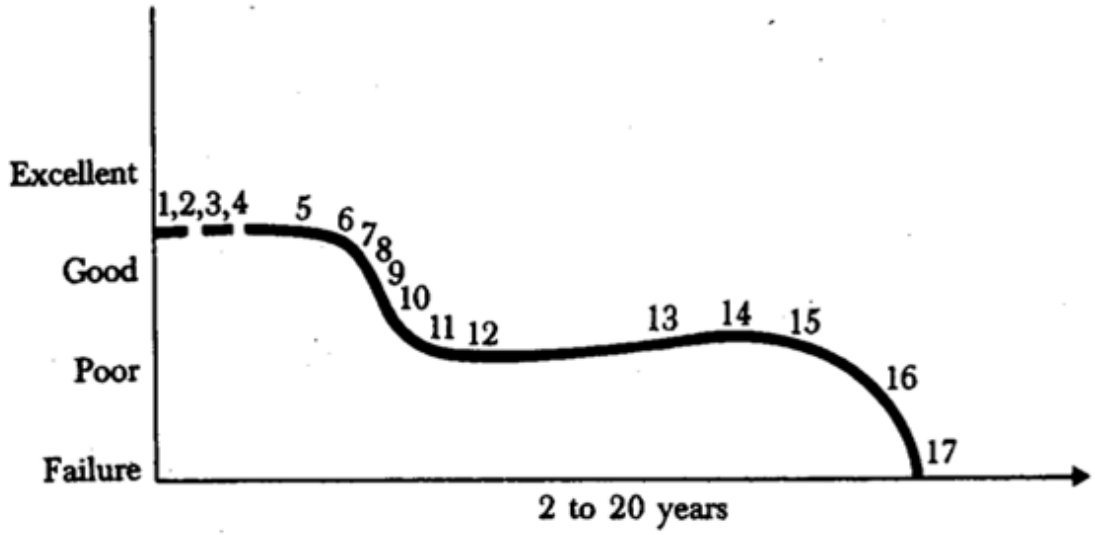
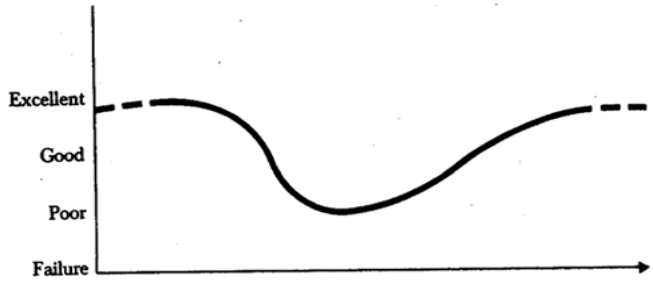
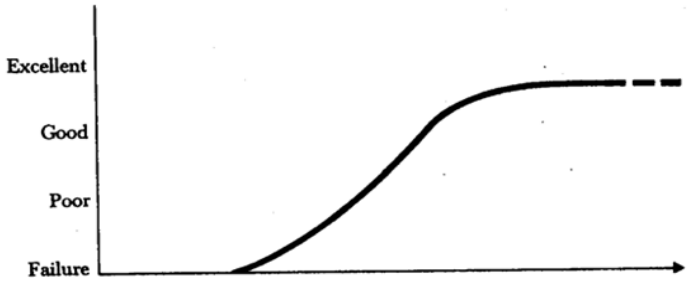


Figure 2.5: Type 3 failure (Arginti, 1976)

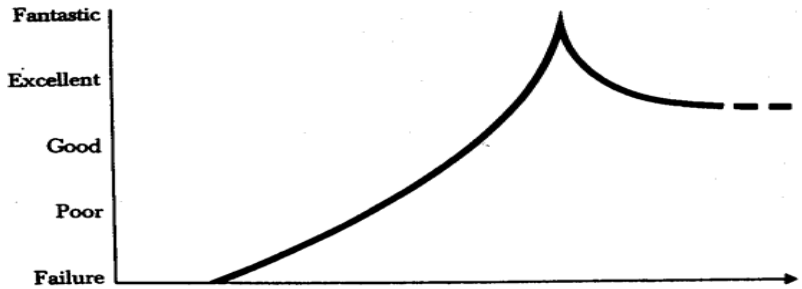
A company following one trajectory could switch to another. The most obvious occasion for a switch is the rescue of a company. Thus Type 3 company, having suffered its initial collapse to point 12 might be rescued and then live happily ever after as shown in Figure. Type 2 might be rescued either before it becomes absurd at point 14 (Figure) or on its way down after the peak (see Figure). Alternatively an entirely healthy company could be taken over by a manager of unusual ambition who, in his attempt to achieve fame and fortune breaks the company. Figure shows a switch in trajectory from a non-failing trajectory to Type2. Any change from one style of top management to another can caused a switch from trajectory to another.

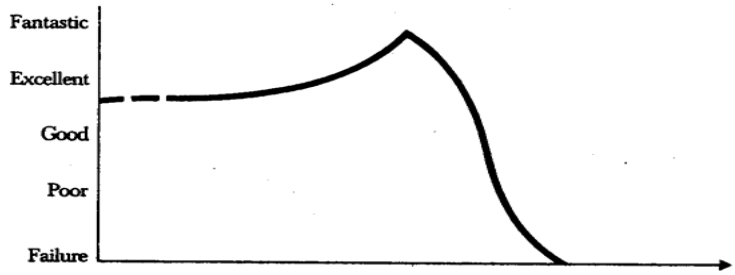


Rescue of a Type 3 company after its initial collapse has occurred



Rescue of a Type 2 company before the pick has been reached





Rescue of a Type 2 company after the pick has been reached

Figure 2.6 Rescue of the three types of failure (Arginti, 1976)

2.5 Prevention and cure of failure

Type 1 companies are nearly always very small. The concern should be for the proprietor. When Type 1 Company fails it is he who usually loses most, as it never got off the ground, very few other people are deeply dependent upon it. It fails because the proprietor has very seriously overestimated the revenues or underestimated the costs of his project. Type 1 failures cannot be cured. In this case prevention is better than cure. A completely different situation confronts us with Type 2 company failures. For one thing, they grow so large that a great number of people other than the proprietor become dependent upon them. For another, there is usually a profitable core that is well worth salvaging even after insolvency. Cure of Type 2 Company may take many forms such as cutting back or selling off any unprofitable activities or a takeover may be arranged.

Prevention may take the form of constraining the chief executive's excesses of enthusiasm. Again the problem is different with Type 3 failure. The companies here is often large or medium-size one upon which a number of people have already become dependent. Both prevention and cure are possible; cure is possible along almost the whole length of the very long trajectory.

2.6. Avoiding Business Failure

2.6.1. Pre-Emptive Actions

Entrepreneurs should be ready to take up all the necessary actions in order to prevent a business failure. Businesses rarely fail suddenly: Failure is a gradual process which usually involves adown ward spiral. However, sometimes failure results from ambitious expansion plans not accompanied by the appropriate level of finance. It should be stressed that entrepreneurs should have a proactive approach, taking the necessary actions as soon as financial problems become apparent.

Majority of factors leading to failure are preceded by premonitory signs of insolvency. Therefore, entrepreneurs should be trained in order to be able to detect and identify warning signs in good time.

2.6.1.1. External Advice

Advice from professionally qualified financial accountants should be sought regularly, beginning at the startup phase, and continuing through all the stages of business life. Entrepreneurs need to be aware of the benefits of acquiring basic financial management skills to take advantage of any opportunities of growth and to anticipate any threats to the survival of the business, reacting to them promptly.

Management education should be provided even before starting out in business. There is a key role of professionally qualified accountants in areas such accounting, financial planning and credit management. Bookkeeping and Financial Reporting practices should be according to recognized accounting principles and sound business practice, in order to produce high quality financial information, which sets the ground for the efficient and effective growth and the survival of the business.

2.6.1.2 Planning, Budgeting and Forecasting

A well-run business will have controls in place to monitor the business plans and an information system which regularly updates the management on progress towards its objectives. Controls should also give an early warning that the trading performance is deteriorating and provide pointers to steps which should be taken to correct the situation.

Many large companies undertake some very advanced financial modeling based on a number of possible future possibilities and planning, budgeting and forecasting are vital tools for them.
The following paragraphs describe the systems which offer management the opportunity to control and manage the business. If a company does not have the resources in-house to prepare the information, external accountants can help to devise a simplified system of planning, budgeting and forecasting which summarizes key performance indicators and provides a feedback mechanism.

1. Strategic Plans

Preparing a strategic business plan is an important step in developing a long-term view of where the business is going and how it plans together. The key issues to be addressed in a strategic business plan include marketing and financial issues.

- ✓ **Key marketing issues**
  - The products or services currently offered and the potential developments to the range of products;
  - The customer base and how it might be expanded;
  - The distribution channels currently employed and alternative strategies for the future.

- ✓ **Key financial issue**
  - The current level of funding and the requirements for future developments,
  - The anticipated profitability and cash flow of the business,
  - The current and future return to investors.

Business plans must be a constant reference point for the management and updated periodically as the business progresses towards its goals.

2. Business Plans for Finance Providers

When a business is considering raising finance, the benefits of having a strategic plan become apparent as the key marketing aspects of the business will be well established. However, the plan for finance providers needs to cover a wider range of issues to provide parties new to the business with a brief picture of its history, product range, management and business prospects. Potential finance providers will expect to see the following issues covered in addition to the marketing information extracted from the strategic plan:

- How the business plans to deliver the anticipated sales projections;
- The current facilities and plans for expansion or upgrading;
- The management and staff of the business (including positions, experience, qualifications, etc.);

- The current ownership;
- Key financial information for the last 3/5 years with forward projections for the next 3/5 years.

The plan will enable the business to sell itself to potential investors and finance providers.

3. Budgeting

It is vital to prepare annual budgets to decide a plan for the business in the following years and to provide a yardstick by which progress can be measured. The management should be able to know whether the business is achieving its targets and if not, to see the variances from the annual target. Budgets are best prepared with a 'bottom up' approach, so that all the people involved are committed to the eventual targets even if the directors have to amend the resulting consolidated budget to achieve the business' goals.

Budgets should be based upon anticipated sales targets (broken down into product lines and number of units/quantities) and anticipated selling prices. The availability of software packages enables budgets to be 'flexed' and to include 'what if' questions (i.e.: 'What happens if selling prices are reduced by 5 %?'). Phasing the sales into months will help other departments within the business (i.e.: the production department of a manufacturing business) plan the resources required throughout the year to meet the sales budgets.

Once the sales levels are planned, the budgets related to the accompanying direct costs, staffing and overhead can be prepared. The capital expenditure budget is frequently the most contentious of the budgets as it is often the key to deciding how a business intends to develop.

The further step is to plan the working capital requirements: levels of stock and work in progress, debtors and creditors. A Balance Sheet and Cash Flow Budget can be prepared. The phasing of sales and costs allows identifying when during the year the requirements for finance are greatest and if the financing facilities will be sufficient for the business' needs.

A simple budget prepared as described above will allow the management to take a first high-level view of the resulting performance and assess whether the overall performance is satisfactory and whether the results are in line with the business plan. It will be also possible to

foresee whether the shareholders and finance providers will be satisfied with the results and whether further finance will be required and, if so, what types of finance will be appropriate (i.e. debt, equity, asset based finance, guarantees, etc.).

If the management are not satisfied with the answers to these questions, they need to consider what changes can be made to achieve the desired outcomes, i.e. setting a less ambitious sales budget to keep the financing requirements within known facilities.

Once the budget has been settled, it becomes the yardstick for measuring performance over the next year.

4. Management Accounts

Having set the targets, it is important to monitor progress through the preparation of monthly (or quarterly) management accounts. Unlike statutory accounts, management accounts can be in any format the management chooses; usually they would include information on:

- Sales by quantity and value,
- Direct Costs,
- Gross Profit by product or service,
- Overheads,
- Operating profit,
- Interest,
- Net Profit.

The management accounts might also include non-financial information such as sales or marketing statistics, labor costs, etc. and are usually accompanied by a narrative. Significant variances from budget would be explained as well as agreed actions to get the business back on budget.

5. Forecasting

If cash flow becomes critical, or there is a danger the business might exceed its financing facilities, a short term cash flow forecast can help plan a way forward, either until position stabilizes or until it is appropriate to discuss the situation with stakeholders or finance providers.

It is advisable for businesses with cash flow problems to prepare a daily forecast of receipts and payments to calculate how much can be paid to the most pressing creditors as well as

highlighting the actions required to generate additional cash flow. The availability of forecasting spreadsheets make preparation of ad-hoc forecasts easier and often more meaningful. In case the management decides that the annual budget is no longer relevant to the business, then ad-hoc forecasts can be substituted.

With the assistance of this short term forecasting the management can often manage the business through a cash crisis until the situation has stabilized or until it can devise appropriate longer term solutions.

2.6.1.3 Audit

Where the financial statements of the company are audited, the entrepreneur will have a higher level of assurance that the company's financial information provides a sound basis for economic decisions. Independent audit is also a deterrent against fraud and increases the likelihood that any frauds committed will be detected.

For this reason, it is advisable also for those companies for which audit are not compulsory by national law to commission a voluntary audit of their financial statements. This will enhance the credibility of the company's financial reporting and results, especially from the perspective of banks.

If the audit report includes a qualified, disclaimer of or adverse opinion, or an 'emphasis of matter' paragraph in which the auditors stress a going concern problem or a significant uncertainty of which the resolution is dependent upon future events and which may affect the financial statements (tax or other litigations etc.), it is important for entrepreneurs to solve the identified problems as they represent causes of potential insolvency of the business. To this extent, the audit process can offer helpful early warnings of possible problems the business is facing.

Auditors' involvement may also provide value added in that a discussion can take place on the risks facing the company. The auditors will be able to provide advice in identifying the more risky areas and the appropriate control measures to implement in order to tackle risks.

2.6.1.4. Cash Flow Statements

A cash flow statement is one of the most useful financial management tools to assess the timing, amount and predictability of future cash flows and can be the basis for budgeting. In Europe from January 2005 cash flow statements will be compulsory for listed companies, as they have to prepare their consolidated financial statements according to IFRS11; however, regardless of any law obligation, a cash flow statement can be very useful.

Information about the cash flows of a company is useful in providing users of financial statements with a basis to assess the 'ability of the company to generate cash and cash equivalents and the needs of the company to utilize those cash flows'. The economic decisions that are taken by users require an evaluation of the ability of the company to generate cash and the timing and certainty of their generation.

When used in conjunction with the rest of the financial statements, a cash flow statement provides information that enables users to evaluate the changes in net assets of a company, its financial structure (including its liquidity and solvency) and its liability to affect the amounts and timing of cash flows in order to adapt to changing circumstances and opportunities. A cash flow statement is a key to understanding the investment and financing philosophy of a borrower; it will be used by banks to assess whether the business has enough cash to generate cash to repay a loan.

Cash flow information also enables users to develop models to compare the present value of the future cash flows of different companies; it enhances the comparability of the reporting of operating performance by different company because it eliminates the effects of using different accounting treatments for the same transactions and events.

The cash flow statement should report cash flows during the period classified by operations, investing and financing activities.

1. Operating Activities

The amount of cash flows arising from operating activities is a key indicator of the extent to which the operations of the enterprise have generated sufficient cash flows to repay loans,

maintain the operating capability of the company, pay dividends and make new investments without recourse to external sources of financing. Information about the specific components of historical operating cash flows is useful, in conjunction with other information, in forecasting future operating cash flows.

Cash flows from operating activities are primarily derived from the principal revenue-producing activities of the company. Therefore, they generally result from the transactions and other events that enter into the determination of net profit or loss.

2. Investing Activities

The separate disclosure of cash flows arising from investing activities is important because the cash flows represent the extent to which expenditures have been made for resources intended to generate future income and cash flows.

3. Financing Activities

A company should report cash flows from operating activities using either:

a) The direct method, whereby major classes of gross cash receipts and gross cash payments are disclosed; or

b) The indirect method, whereby net profit or loss is adjusted for the effects of transactions of an on cash nature, any deferrals or accruals of past or future operating cash receipts or payments, and items of income or expense associated with investing or financing cash flows. The separate disclosure of cash flows arising from financing activities is important because it is useful in predicting claims on future cash flows by providers of capital to the company.

2.6.1.5 Ratios

An effective business strategy can be developed only after an accurate analysis. Entrepreneur should consider monitoring of business performance and planning, together with a subsequent gap analysis between actual and budget, as regular activities.

Benefit can be drawn from the financial statements when they are compared to other statistics: such comparisons are the essence of why business and financial ratios are developed. The monitoring of such indicators can help in taking appropriate and prudent decisions related to

investment and loan finance.

In order to assess how the business is doing, various ratios can be established from key figures on the financial statements. These ratios are very simple to calculate - sometimes they are simply expressed in the format 'x/y'. They can be a powerful tool because they provide an easily understandable summary of the relationship between the figures involved.

When ratios are routinely calculated and recorded at the end of every accounting period, this allows assessing the business performance over time, and comparing the business to others in the same industry or to others of a similar size. Besides, banks routinely use business ratios to evaluate a business that's applying for a loan, and some creditors use them to determine whether to extend credit.

When comparing changes in the business's ratios from period to period, one can pinpoint improvements in performance or detecting problem areas. By comparing the ratios to those in other businesses, possibilities for improvement in key areas can be identified. A number of sources, including many trade or business associations and organizations, provide data for comparison purposes; they are also available from commercial services. Professional Accountants may be a good source of information on how the business compares to similar ones in the particular locale.

2.7 Summary of literature review

Literature review was done on previous studies, internet, construction management books, and engineering journals on the topics of causes of contractors' failure. The various sections of this chapter have been written to give a clear and detailed description on the aspects as well as relevant issues that are normally associated with overall causes of contractors' failure. The whole chapter includes key term definitions, Causes and Symptoms of contractors' Business Failure, models of Business Failure, types of Business Failure and their description, methods of prevention and cure of Business failure, techniques of avoiding Business failure and related issues. This would be used to develop the questionnaire survey in order to collect data from the respondents. After reviewing numerous literatures and previously conducted researches; proper understanding of the different types of causes of construction business failures, prevention, cure and avoiding Business failure are crucial for industry, due to its high contribution to Ethiopian economy, as demonstrated by its share in the GDP.

Therefore, the concentration of information provided in this chapter is hoped to have achieved its goal in comprehensive overview of the different causes of contractors' failure in both developed and developing countries and finally the problems and recommendations are intended to be addressed in the study.

CHAPTER 3 MATERIALS AND METHODS

3.1 Introduction

This chapter describes the methodology of the study. The main topics included in this chapter are project study strategy, project study design and data collection. The objectives of this study were to identify causes of class I contractors' failure and makes conclusions and recommendations based on findings.

The procedures applied to achieve the objective of the study are: problem identification, literature review, project study design, data collection, project study analysis and discussion and draw conclusion from the result of data analysis and forward recommendations (See figure 3.1)

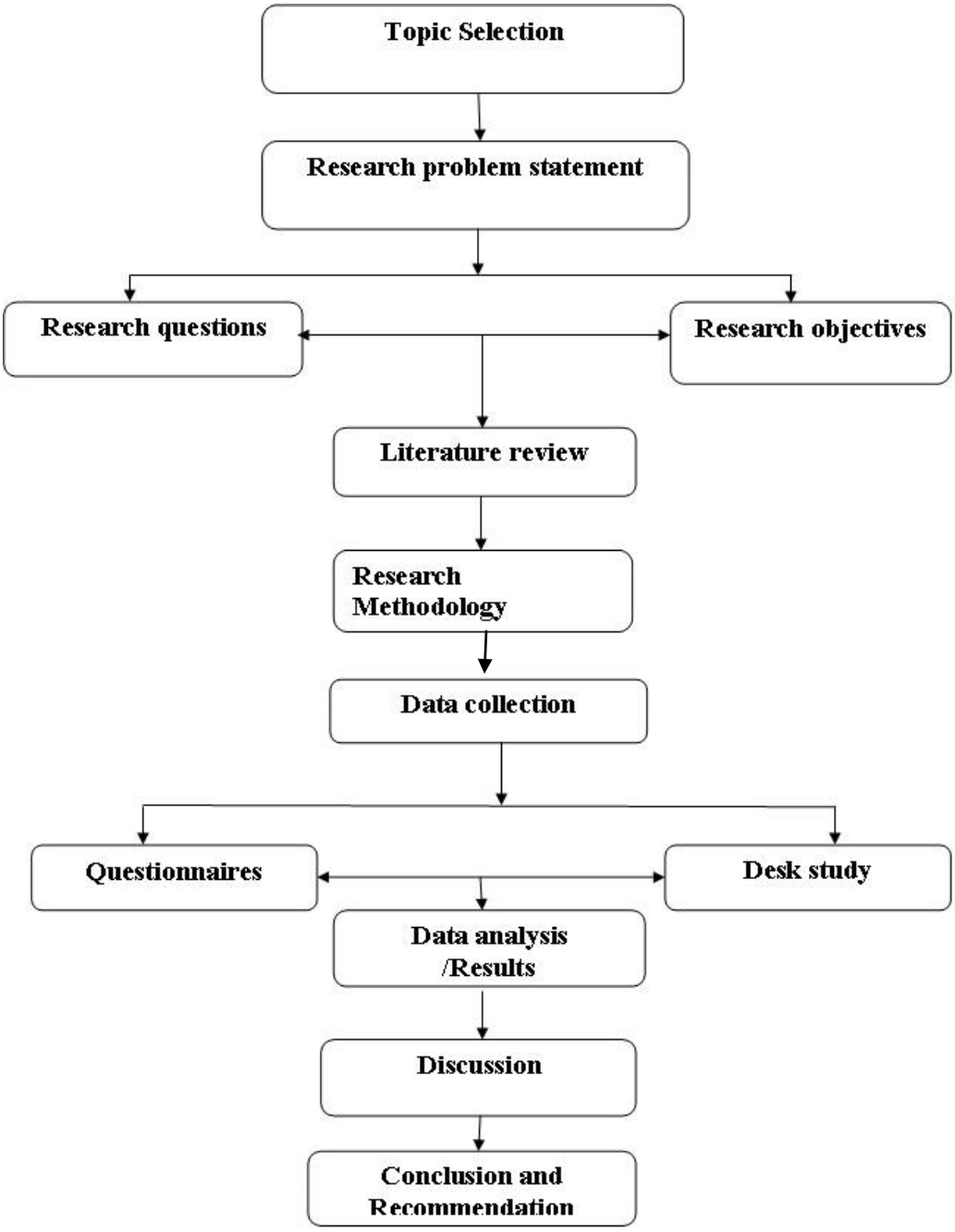


Figure 3.1: Research Methodology flow chart

3.2 Study design

Burns & Grove (1987) defined the term design as:

"Some consider research design to be the entire strategy for the study, from identifying the problem to find plans for data collection. Other limit design to clearly define structural framework within which the study is implemented". The framework that the researcher creates is the design (Wood & Haber, 1998).

The purpose of the research design is to provide the plan for answering research problem (Wood & Haber, 1998).

The research was both qualitative and quantitative in nature. Some of the data collected was in numeric form while some of the data was in descriptive form.

The strategy followed in carrying out the research was started with problem identification which has been done through unstructured literature review, archival study and informal discussion with colleagues and professionals in the sector; and then the research design was formulated.

Following this data, information sources were determined based on the formulated research design. On the basis of the data and information sources the research instruments were decided; and available documentary sources relevant to the research were reviewed. The review includes books, journal and articles, internet sources and archival documents of contractors.

A structured questionnaire with personal interview will be used together in this study for their advantages. The structured questionnaire is probably the most widely used data collection technique for conducting surveys to find out facts, opinions and views.

3.3 Questionnaire Design

A closed-ended questionnaire was used for its advantages such as: it is easy to ask and quick to answer, they require no writing by either respondent or interviewer, and their analysis is straight forward (Naoum, 1998). For survey study a questionnaire of 51 factors was carefully designed from literatures conducted in building construction projects.

Thus, in this study, the response of the questionnaire data was prepared based on the scale of

five-point rating scale measurement of the agreement towards each statement from 1to 5 . It was organized in the form of a priority scaling (1=Very low influence, 2= low influence, 3 = moderate influence, 4 = high influence, and 5 = Very high influence). The reason to adopting this simple scale is as to provide simplicity for the respondent to answer and to make evaluation of collected data easier to evaluate; and to rank major cause of failure as the objective of the study.

Table 3.1: Scales that represent level of agreement

Chances of occurrence	Very high influence	high influence	moderate influence	low influence	Very low influence
Scale	5	4	3	2	1

The factors that cause failure to contractors were defined through a detailed literature review. These factors were translated into questions of simple, easy, unambiguous form.

Questions of similar topics were grouped together to build the main areas of the draft questionnaire.

The factors that cause contractors failure were divided into four main groups:

- Management group
- Financial group
- Expansion group
- Environmental

List of the groups are listed in Table 3.2below:

Table 3.2 Main and sub-factors group

NO	Main factor group	Sub-factor group
1.	**Management group**	1. Lack of experience in the line of work 2. Replace key personnel 3. Absence of project leader in the site 4. Bad decisions in regulating company policy 5. Reduced Labor productivity and improvement 6. Improper use of project management techniques

		7. Company organization 8. Procurement practices 9. Claims 10. Internal company problems 11. Owner absence from the company 12. Improper use of computers applications 13. Frauds 14. Neglect 15. Improper use of documentation system 16. Lack of experience in contracts 17. One man rule 18. Poor Communication system 19. Not react to change 20. Lack of Commitment 21. Lack Competent consultation 22. Poor Control system
2	**Financial group**	1.Low margin of profit due to competition 2. Cash flow management 3. Estimating practices 4. Dealing with variation order 5. Bill and collecting effectively 6. Controlling equipment cost and usage 7. Evaluation of profit yearly 8. Employee benefits and compensation 9. Material wastages 10. Lack of capital 11. Mistiming of capital expenditures 12. Difference of local currency exchange with contract currency 13. Depending on banks and paying high interests 14. Inflation

3	**Expansion group**	1. Expansion in to new geographic locations 2. Opening a regional office in other governorates 3. Increase number of projects 4. Increase size of projects 5. Change in the type of work 6. Lack of managerial development as the company growth 7. Change from private to public or vice versa
4	**Environmental group**	1. National slump in economy 2. Absence of construction industry regulations 3.Award contracts to lowest price 4. Absence of specialized courts 5. Owner involvement in construction phase 6. Bad weather 7. Accounting and tax practices 8. Insufficient award of contracts

3.4 Study population

A population consists of the totality of the observations with which we are concerned (Walpole and Myers, 1998). In this study, the population is the total numbers of class I Building contractors (82 contractors) who have valid registration by the Ministry of Urban Development and housing construction.

3.5 Data Sampling

3.5.1 Sample size

Sampling is the process of selecting representative units of a population for study in research investigation (Wood and Haber, 1998). It is a small portion of a population selected for observation & analysis. A statistical calculation is used to insure that the chosen sample fully represents the population. Equation 3.1 was used to determine the sample size of the unlimited population. (Creative Research Systems, 2001)

$$SS = \frac{Z^2 * P * (1-p)}{C^2}$$ ……Equation 3.1

Where:

SS= Sample Size

Z = Z value (e.g. 1.96 for 95% confidence level)

P= Percentage picking a choice as a decimal (0.5 used for sample size needed)

C = Margin of Error (10%)

$$SS = \frac{1.96^2 * 0.5 * (1-0.5)}{0.1^2} \approx 96.$$

Correction for finite population

$$SSnew = \frac{SS}{1 + \frac{SS-1}{POP}}$$ ……Equation 3.2

Where POP is the population of class I building contractor, which are 82.

$$SSnew = \frac{96}{1+\frac{96-1}{82}} = 44.48 \approx 45$$

A total of 45 questionnaires were sent to class I building contractors in the Ethiopian building construction industry. The number of respondents was 33 companies, out of which 3 were rejected. So the sample size selected was 30 contracting companies which is considered sufficient and meets the statistical requirements of Hoog and Tannis (1997) and also meets with what has been written by Grove and Burns (1993) that the sample size should contain at least 30 subjects. This means an effective response rate of 66.67%. This rate is considered acceptable compared with the norm of 60- 70% of most structured interview questionnaire in construction industry as outlined by Naoum (1998).This was believed to be acceptable for the research.

3.5.2 Sample method

Simple random sampling was used to represent the total sample size, since it is the most basic of the probability plans. For the survey study, questionnaires were developed and distributed to available 45 contractors. And to assure the quality of data, only professionals which have engineering knowledge were included.

3.6 Data collection

The data collection approach adopted for conducting this study includes both primary and secondary sources. Questionnaire with study participants (contractors), interview and observation provide the primary data for this study, while the secondary resources have been utilized in collecting data, these includes research papers, journals, internet web pages, literatures, reference books, previous studies etc. written on similar topic. Information was gathered through extensive reading and understanding, making notes as well as keeping record of reference list for an easy identification. These different methods of data collection have been used, in order to obtain data or information from informants. This can be supplemented by others for the fact that, the collected data will give multiple evidences.

The personal interview, which is a face-to-face process, in which the respondents were asked questions with a brief explanation for the ideas and contents of questionnaire, was conducted.

3.7 Data Analysis

The procedure used in analyzing the results aimed at establishing the mean score of the various parameters of causes of class I building contractors failure. The score for each factor is calculated by summing up scores assigned to it by respondents.

The mean score (MS) for each factors of class I building contractors failure was computed by using the following formula;

$$Msi = \Sigma (f*s)/N \quad \text{..... Equation 3.3}$$

Where; s = score given to each cause of class I building contractors failure by respondents;

f = frequency of responses to each cause of class I building contractors failure;

N = total number of responses in the respective cause of class I building contractors failure

The findings have been summarized and presented by using different tabular tools plus supported with further discussions. Finally, from the discussion in the study, conclusions were made and recommendations are given for reducing class I building contractors' failure. In addition some areas of further research were suggested.

CHAPTER 4 RESULTS

4.1 Results

This chapter deals with the results of the information gathered from the questionnaire survey; which includes analysis of causes of class I building contractors failure. Ranking of factors affecting class I building contractors failure is also illustrated. Analysis of results from questionnaire survey would be discussed in detail in the next chapter, on the basis of which recommendations to construction industry of Ethiopia were made. In the analysis that follows, the survey responses have been grouped in to four major categories.

4.1.1 Questionnaire result

Table 4.1 Questionnaire result

A. Managerial causes

	CAUSES OF FAILURE	Very low influence	low influence	moderate influence	High Influence	Very high influence
1	Lack of experience in the line of work	0	9	11	5	5
2	Replace key personnel	0	3	13	4	10
3	Absence of project leader in the site	2	3	13	7	5
4	Bad decisions in regulating company policy	2	4	8	6	10
5	Reduced Labor productivity and improvement	5	0	8	11	6
6	Improper use of project management techniques	0	5	3	12	10
7	Company organization	5	2	9	5	9
8	Procurement practices	7	2	7	5	9
9	Claims	6	5	9	0	10

10	Internal company problems	0	2	11	12	5
11	Poor use of documentation system	0	5	16	4	5
12	Lack of experience in contracts	0	7	14	9	0
13	Owner absent from the company	0	10	10	0	10
14	Improper use of computers applications	7	14	4	5	0
15	Frauds	5	14	2	5	4
16	Neglect	2	7	2	15	4
17	One man rule	0	0	4	8	18
18	Poor Communication system	7	3	6	14	0
19	Not react to change	5	5	11	9	0
20	Lack of Commitment	5	2	7	7	9
21	Lack of Competent consultation	5	0	19	0	6
22	Poor Control system	5	0	6	8	11

B. Financial causes

	Causes of Failure	**Very low influence**	**low influence**	**moderate influence**	**high influence**	**Very high influence**
1	Low margin profit due to competition	0	2	2	7	19
2	Cash flow management	0	0	5	4	21
3	Poor estimation practices	0	3	12	5	10
4	Bill and collecting effectively	0	2	14	5	9
5	Controlling equipment	0	3	11	5	11

	cost and usage					
6	Evaluate project profit in one fiscal year	0	0	8	16	6
7	Employee benefits and compensations	0	9	16	5	0
8	Dealing with variation order	0	14	9	5	2
9	Material wastages	0	5	14	9	2
10	Lack of capital	0	0	0	14	16
11	Mistiming of capital expenditures	0	0	14	2	14
12	Difference of local currency exchange with contract currency	0	0	7	21	2
13	Depending on banks and paying high interests	0	7	6	12	5
14	Inflation	0	0	6	8	16

C. Expansion causes

	Causes of Failure	**Very low influence**	**low influence**	**moderate influence**	**high influence**	**Very high influence**
1	Expansion in to new geographic locations	7	8	10	5	0
2	Opening a regional office	12	10	8	0	0
3	Increased number of projects	10	0	14	4	2
4	Increased size of projects	12	0	14	4	0
5	Change in the type of work	7	2	16	5	0
6	Lack of managerial development or maturity	0	0	6	14	10

	as the company growth					
7	Change from private to public or vice versa	7	9	9	5	0

D. Environmental causes

	Causes of Failure	Very low influence	low influence	moderate influence	high influence	Very high influence
1	National slump in economy	0	2	9	5	14
2	Absence Construction industry regulations	3	6	12	5	4
3	Owner involvement in construction phase	0	5	17	8	0
4	Bad weather	5	14	0	4	7
5	Award contracts to lowest price	0	0	5	4	21
6	Absence of specialized courts	2	9	5	5	9
7	Accounting and tax practices	2	9	5	5	9
8	Insufficient award of contracts	2	6	8	5	9

4.2 Causes of contractors' failure

4.2.1. Main groups

As mentioned before, the main groups of factors affecting contractor's failure were managerial group, financial group, expansion group, and environment group. As illustrated in Table 4.2, the mean and ranking of each group is listed below. The most severe group of factors that causes contractor's failure was financial group of mean 3.81.

Table 4.2 Mean and ranking of main groups

NO	Main group	Mean	Ranking
1	Financial group	3.81	1
2	Managerial group	3.28	2
3	Environment group	3.30	3
4	Expansion group	2.63	4

4.2.2 Mean and ranking of sub-factors

4.2.2.1 Managerial group

The mean of each of the sub-factors of the managerial group is presented in Table 4.3 in a descending order. Rank of each factor is also listed. One man rule and improper use or missing of project management techniques had the highest means respectively. While, improper use of computer applications had the lowest rank in the same group.

Table 4.3: Means and ranking of managerial sub-factors

No	Sub-factor	Mean	Rank
17.	One man rule	4.47	1
6.	Improper use of project management techniques	3.90	2
2.	Replace key personnel	3.70	3
23.	Poor Control system	3.67	4
10.	Internal company problems	3.67	4
4.	Bad decisions in regulating company policy	3.60	5
5.	Reduced Labor productivity and improvement	3.43	6
21.	Lack of Commitment	3.43	6
16.	Neglect	3.40	7
7.	Company organization	3.37	8
3.	Absence of project leader in the site	3.33	9
13.	Owner absent from the company	3.33	9
8.	Procurement practices	3.23	10
1.	Lack of experience in the line of work	3.20	11

9.	Claims	3.10	12
12.	Lack of experience in contracts	3.07	13
22.	Lack Competent consultation	3.07	13
19.	Poor Communication system	2.90	14
11.	Poor documentation system	2.80	15
20.	Not react to change	2.80	15
15.	Frauds	2.63	16
14.	Improper use of computer applications	2.23	17

4.2.2.2 Financial group

Mean of each of sub-factor of financial group is presented in Table 4.4 in a descending manner. Rank of each factor is also listed. Cash flow management and Lack of capital had the highest means respectively. While dealing with variation order had the lowest rank in the same group.

Table 4.4: Means and ranking of financial sub-factors

No	Sub-factor	Mean	Rank
2.	cash flow management	4.53	1
10.	Lack of capital	4.53	1
1.	Low margin profit due to competition	4.43	2
14	Inflation	4.33	3
11.	Mistiming of capital expenditures	4.00	4
6.	Evaluate project profit in one fiscal year	3.93	5
12.	Difference of local currency exchange with contract currency	3.83	6
5.	Controlling equipment cost and usage	3.80	7
3.	Poor estimation practices	3.73	8
4.	Bill and collecting effectively	3.70	9
13.	Depending on banks and paying high interests	3.50	10
9.	Material wastages	3.27	11
7.	Employee benefits and compensations	2.87	12
8.	Dealing with variation order	2.83	13

4.2.2.3 Expansion group

There are 7 sub-factors under the expansion group outlined in table 4.5. Lack of managerial development as the company growth and Change in the type of work were ranked at the first and second positions with mean ranks of 4.13 and 2.63 respectively. At the middle, Increased number of projects, Expansion in to new geographic locations, and Change from private to public or vice versa were ranked in the third, fourth and fifth positions. Both increased size of projects and opening a regional office were ranked at position 6 and 7 with mean rank of 2.33 and 1.87 respectively.

Table 4.5: Means and ranking of expansion group sub-factors

No	Sub-factor	Mean	Rank
6	Lack of managerial development or maturity as the company growth	4.13	1
5	Change in the type of work	2.63	2
3	Increased number of projects	2.60	3
1	Expansion in to new geographic locations	2.43	4
7	Change from private to public or vice versa	2.40	5
4	increased size of projects	2.33	6
2	opening a regional office	1.87	7

4.2.2.4 Environment group

There are 8 sub-factors listed under the environment group shown in table 4.6. The highest three causes are Award contracts to lowest price, national slump in economy and Insufficient award of contracts.

On the other hand, the lowest three causes are bad weather, Accounting and tax practices and Absence of specialized courts. Absence of Construction industry regulations is at the middle.

Table 4.6: Means and ranking of environment sub-factors

No	Sub-factor	Mean	Rank
5	Award contracts to lowest price	4.53	1
1	national slump in economy	3.73	2
8	Insufficient award of contracts	3.23	3
3	Owner involvement in construction phase	3.10	4
2	Absence Construction industry regulations	3.03	5
6	Absence of specialized courts	3.00	6
7	Accounting and tax practices	3.00	7
4	Bad weather	2.80	8

4.2.2.5 Over-all ranks of all sub-factors causing failure

Table 4.7 outlines the factors affecting contractor's failure in descending manner. It indicates that the five sever factors are “cash flow management ,Award contracts to lowest price, Lack of capital, One man rule, and Low margin profit due to competition" with mean ranks 4.53, 4.53, 4.53, 4.47, and 4.43 respectively. All of these factors are related to financial group, managerial group and environmental group. It has been noticed that the "opening a regional office, Using computer applications, Increased size of projects, Change from private to public or vice versa, Expansion in to new geographic locations" are the lowest five factors that causing contractor's failure with mean ranks 1.87, 2.23, 2.33, 2.40, 2.43 respectively.

Table 4.7: Overall means and ranks of all sub-factors

Sub-factor	Mean	Rank
cash flow management	4.53	1
Award contracts to lowest price	4.53	1
Lack of capital	4.53	1
One man rule	4.47	2
Low margin profit due to competition	4.43	3
Inflation	4.33	4
Lack of managerial development or maturity as the	4.13	5

company growth		
Mistiming of capital expenditures	4.00	6
Evaluate project profit in one fiscal year	3.93	7
Improper use of project management techniques	3.90	8
Difference of local currency exchange with contract currency	3.83	9
Controlling equipment cost and usage	3.80	10
Poor estimation practices	3.73	11
National slump in economy	3.73	11
Replace key personnel	3.70	12
Bill and collecting effectively	3.70	12
Internal company problems	3.67	13
Poor Control system	3.67	13
Bad decisions in regulating company policy	3.60	14
Depending on banks and paying high interests	3.50	15
Reduced Labor productivity and improvement	3.43	16
Lack of Commitment	3.43	16
Neglect	3.40	17
Company organization	3.37	18
Absence of project leader in the site	3.33	19
Owner absent from the company	3.33	19
Material wastages	3.27	20
Poor Procurement practices	3.23	21
Insufficient award of contracts	3.23	21
Lack of experience in the line of work	3.20	22
Owner involvement in construction phase	3.10	23
Claims	3.10	23
Lack of experience in contracts	3.07	24
Lack of Competent consultation	3.07	24
Absence Construction industry regulations	3.03	25
Absence of specialized courts	3.00	26
Accounting and tax practices	3.00	26

Poor Communication system	2.90	27
Employee benefits and compensations	2.87	28
Dealing with variation order	2.83	29
Not react to change	2.80	30
Poor documentation system	2.80	30
Bad weather	2.80	30
Frauds	2.63	31
Change in the type of work	2.63	31
Increased number of projects	2.60	32
Expansion in to new geographic locations	2.43	33
Change from private to public or vice versa	2.40	34
Increased size of projects	2.33	35
Improper Use of computer applications	2.23	36
opening a regional office	1.87	37

4.2.2.6 The highest ten causes of failure

The highest ten factors that causes contractor's failure are illustrated in Table 4.8.

Table 4.8: The highest ten factors of failure

Sub-factor	Mean	Rank
cash flow management	4.53	1
Award contracts to lowest price	4.53	1
Lack of capital	4.53	1
One man rule	4.47	2
Low margin profit due to competition	4.43	3
Inflation	4.33	4
Lack of managerial development or maturity as the company growth	4.13	5
Mistiming of capital expenditures	4.00	6
Evaluate project profit in one fiscal year	3.93	7
Improper Use of project management techniques	3.90	8

CHAPTER 5 DISCUSSION

This study is to determine the causes of contractor's failure in Ethiopia. Then, determine the severity of each factor from the contactor's point of view. In this chapter the results and findings of this study are discussed in detail.

5.1 Sample size characteristics

The sample size of this study was selected randomly to represent the study population of Building contractor categories of contracting companies who had valid registration in Ministry of Urban Development and housing construction. This sample size was calculated using Creative Research Systems (2001). A total of 45 questionnaires were sent to class I building contractors in the Ethiopian building construction industry. The number of respondents was 33 companies, out of which 3 were rejected. So the sample size selected was 30 contracting companies which is considered sufficient and meets the statistical requirements of Hoog and Tannis (1997) and also meets with what has been written by Grove and Burns (1993) that the sample size should contain at least 30 subjects. This means an effective response rate of 66.67%. This rate is considered acceptable compared with the norm of 60- 70% of most structured interview questionnaire in construction industry as outlined by Naoum (1998).This was believed to be acceptable for the study.

5.2 Causes of failure

This study has been conducted to determine the severity of 51 factors that cause failure to class I building contractors in the Ethiopia. The causes have been selected by a careful review of the literature and previous studies of the same or similar subject. The 51 sub-factors were divided into four major groups as follows:

- Managerial group
- Financial group
- Expansion group
- Environment group

5.2.1 Managerial group

The results showed that the mean of managerial group was 3.28. While the mean of overall sub-factors was 3.34. The Managerial sub-factors that had means more than the average mean of overall sub-factors were:

- One man rule
- Improper use or missing of project management techniques
- Replace key personnel
- Poor Control system
- Internal company problems
- Bad decisions in regulating company policy
- Reduced Labor productivity and improvement
- Lack of Commitment
- Neglect
- Company organization

The previous sub-factors are considered the most important causes under the managerial group. This result was supported by the results of Arditi, Koksal, and Kale (2000) in their study that the organizational (managerial) factors represent only 17.14% of business factors.

All contractors had almost the same trend towards the managerial sub-factors and no significant difference had been appeared in results.

It seemed from results that the lowest managerial sub-factors were:

- Improper use or missing of computer applications
- Frauds
- Not react to change
- Poor documentation system
- Poor Communication system

5.2.2 Financial group

The results illustrated that the mean of financial group was 3.81 which is higher than the mean of overall causes of failure (3.34). The results demonstrated that the following financial causes had means over the average mean of overall sub-factors:

- Cash flow management
- Lack of capital
- Low margin profit due to competition
- Inflation
- Mistiming of capital expenditures
- Evaluate project profit in one fiscal year
- Difference of local currency exchange with contract currency
- Controlling equipment cost and usage
- Poor estimation practices
- Bill and collecting effectively
- Depending on banks and paying high interests

This was supported by many studies. The study of Arditi, Koksal, and Kale (2000) gives the financial factors weight of 56.82% of construction business failure. They concluded that over 80% of the failures were caused by five factors, namely 'insufficient profits' (26.71%), 'industry weakness' (22.73%), 'heavy operating expenses' (17.8%), 'insufficient capital' (8.29%), and 'burdensome institutional debt' (5.93%). All of these factors, except 'industry weakness', are financial factors. Results showed that the following financial causes had the lowest means:

- Dealing with variation order
- Employee benefits and compensations
- Material wastages
- Depending on banks and paying high interests
- Bill and collecting effectively

5.2.3 Expansion group

Only 7 factors were listed under expansion group. The average mean of these factors was found to be 2.63. It is lower when compared with the overall sub-factors average mean of 3.34.
Only one factor had mean over the mean of overall sub-factors. That is:

- Lack of managerial development or maturity as the company grow

The first factor under expansion group with mean equal to 4.13 is related to the capability of the company to adjust itself when it must do. It is directly related to managerial development while company under expansion.
In the study of Arditi, Koksal, and Kale (2000), over expansion factor causing construction business failure had a weighted average occurrence value of only 0.15% of the total failure factors. A number of writers and experts mentioned that the increase of the size of projects as a potent cause of collapse. There seems to be wide agreement that one of the almost tediously repetitive mistake that lead to failure is the big project where costs and times are underestimated or revenues overestimated.

All other causes had a relatively small means as shown in chapter 4. Over expansion can drive a company to higher risk-investment with financial debt, hence increasing its chances of failure. Construction contractors must avoid the increase of the number of projects that the company cannot afford both organizationally and financially. Over expansion may mean that the company is employing too many employees and owns too much equipment, none of which the company is capable of financing.

5.2.4 Environment group

There are 8 sub-factors listed under the environment group. These factors are:

- National slump in economy
- Absence of construction regulations
- Award contract to lowest price
- Absence of specialized courts
- Owner involvement in construction phase
- Bad weather

- Accounting and Tax practice
- Insufficient award of contracts

The average mean of the above sub-factors are 3.30 which is less than the average mean of overall sub-factors (3.34). The environment sub-factors that have means higher than the average overall mean are:

- Award contracts to lowest price
- National slump in economy

While the other sub-factors had relatively low means. The environment study of Arditi, Koksal, and Kale had given the environment factors 20.01% of all factors causing failure.

5.2.5 Overall ranks of all sub-factors

Table 5.1: Ranks of highest ten causes and related groups

Sub-factor	Main group	Mean	Rank
cash flow management	Financial group	4.53	1
Award contracts to lowest price	Environmental group	4.53	1
Lack of capital	Financial group	4.53	1
One man rule	Managerial group	4.47	2
Low margin profit due to competition	Financial group	4.43	3
Inflation	Financial group	4.33	4
Lack of managerial development or maturity as the company growth	Expansion group	4.13	5
Mistiming of capital expenditures	Financial group	4.00	6
Evaluate project profit in one fiscal year	Financial group	3.93	7
Improper use of project management techniques	managerial group	3.90	8

The results show that the ranks of the highest ten factors that cause failure are related mainly to financial and managerial groups as illustrated in Table 5.1.

CHAPTER 6 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This chapter seeks to summarize and provide conclusion to the study as well as suggest recommendations for future improvement and development. In this study, understanding the mechanism of failure is based on collecting information about the causes of construction business failures and then corrective actions may be done to prevent or reverse the construction company's collapse. Identification of the severity of causes of failure was a major result of this study.

Conclusions for this study will be based on the objectives mentioned on section 1.11 of the introduction chapter. All of the objectives of this study have been achieved. Recommendations are forwarded to various stakeholders in order to minimize failure of class I building contractors'. Therefore, the following conclusions and recommendations are drawn from the investigation undertaken on the study.

1. The research showed that 51 sub factors which cause failure of class I building contractors were identified and combined in to four main groups namely managerial, financial, expansion and environmental.

2. The study revealed that the four main groups considered in this study were ranked according to their severity of causing failure in descending manner as follows:

- Financial group,
- Environmental group,
- Managerial group, and
- Expansion group.

The most severe group of factors that causes contractor's failure was financial group.

3. The study revealed that out of 51 possible causes of class I building contractors' failure, the top ten causes which were identified by the respondents as the most significant in descending manner are:

- Cash flow management,
- Award contracts to lowest price,
- Lack of capital,

- One man rule,
- Low margin profit due to competition,
- Inflation,
- Lack of managerial development or maturity as the company growth,
- Mistiming of capital expenditures,
- Evaluate project profit in one fiscal year,
- Improper use of project management techniques.

Out of these ten highest causes, six of them are listed under the financial group, two of them are listed under the Managerial group, one from Environmental group, and one from Expansion group. Therefore it is possible to conclude that special attention should be paid to the ten significant causes of class I building contractors failure. Further, it is also anticipated that class I construction companies will be better able to prevent business failure and this should be relevant to the current need of construction industry and significant to the society.

6.2 Recommendations

- Contracting companies should improve their financial and managerial abilities and practice in order to meet the challenge.
- Tenders must be awarded to the best respondent bid with accurate cost estimate and not necessarily to the lowest bidders.
- Contracting companies should practice working together in joint venture to strengthen their resources.
- Contract price should be connected with the price index.
- The construction minister should conduct continuous training program, with cooperation of Contractors Union and universities in order to improve managerial and financial practice of local contractors.
- Contracting companies should consider risk of business environment in their estimate.
- The construction minister should establish proper regulations for the industry and suggest the appropriate mechanism for their enforcement.
- Contracting companies should not increase the number of projects that cannot be controlled.
- It's recommended that each contractor establish a program for motivating workers. This program should be designated to cover as many workers as possible.

6.3 Proposed further studies

- Studies about the technology of failure prediction and administrative mechanism for applying this technology to contractors in Ethiopia are needed.
- There is a need to model and modeling applications of the causes of failure that help in failure prediction.

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APPENDIX

Questionnaire

Causes of Contractor Failure

Symbol	Meaning
1	Very low influence
2	low influence
3	moderate influence
4	high influence
5	Very high influence

I.	Managerial group	1	2	3	4	5
1	Lack of experience in the of work					
2	Replace key personnel					
3	Absence of project leader in the site					
4	Bad decisions in regulating company policy					
5	Reduced labor productivity and improvement					
6	Improper use of project management techniques					
7	Company organization					
8	Poor Procurement practices					
9	Claims					
10	Internal company problems					
11	Improper use of documentation system					
12	Lack of experience in contracts					
13	Owner absent from the company					
14	Using computer applications					
15	Frauds					
16	Neglect					

17	One man rule					
18	Communication system					
19	React to change					
20	Commitment					
21	Competent consultation					
22	Control system					

II.	**Financial group**	**1**	**2**	**3**	**4**	**5**
1	Low margin profit due to competition					
2	Cash flow management					
3	Poor estimation practices					
4	Bill and collecting effectively					
5	Controlling equipment cost and usage					
6	Evaluate project profit in one fiscal year					
7	Employee benefits and compensations					
8	Dealing with variation order					
9	Material wastages					
10	Lack of capital					
11	Mistiming of capital expenditures					
12	Difference of local currency exchange with contract currency					
13	Depending on banks and paying high interests					
18	Inflation					

III.	Expansion group	1	2	3	4	5
1	Expansion in to new geographic locations					
2	Opening a regional office					
3	Increased number of projects					
4	Increased size of projects					
5	Change in the type of work					
6	Lack of managerial development or maturity as the company growth					
7	Change from private to public or vice versa					

IV.	Environment group	1	2	3	4	5
1	National slump in economy					
2	Absence Construction industry regulations					
3	Owner involvement in construction phase					
4	Bad weather					
5	Award contracts to lowest price					
6	Absence of specialized courts					
7	Accounting and tax practices					
8	Insufficient award of contracts					